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American Aviation

The Independent Voice of American Aeronautics

MAY 1, 1945

The Air Power League

A HOPEFUL SIGN for the future of the nation's air resources is the organization of the Air Power League with an objective of obtaining national security and permanent peace through air power.

Fortnightly Review
Headed by Charles E. Wilson, president of General Electric, who had an excellent record with the War Production Board in Washington during the aircraft expansion program, the new League shows fine promise of being a potent spokesman for air power. It should occupy the place in the aviation field that the Navy League has occupied so many years in its particular field.

The nation cannot afford to have its aviation industry and its air forces reduced to the humiliating state in which they were left following World War I. This is a new world, one that requires the greatest alertness and research in the air. Jet development must continue unabated. It will be up to the League to lead the way toward a better understanding by the public of the essential importance of maintaining U. S. air power at top strength.

The job is a big one. Strategic bases for postwar air installations, the size and the character of permanent air forces, contract termination policies, stand-by production capacity needs, methods of disposal of surplus aircraft, means of continuing the interest of trained combat airmen, research, and youth education—all these are subjects for action.

The Army and Navy air services always have lacked a strong public voice. Various aviation organizations have had defense planks in their programs,

(Turn to page 6)



Promoted by PCA

Raymond G. Lochiel, treasurer of Pennsylvania-Central Airlines, has been elected a vice president. Lochiel has been a PCA official since the organization of the airline in 1936, and has had an active part in its expansion.

Late Bulletins

Many Fares Reduced

All domestic carriers, except PCA were scheduled to put in effect 5% discounts on round trip tickets May 1, subject to CAB approval. The same tariffs propose additional fare cuts, effective May 1, by 11 airlines. PCA has made substantial reductions on many routes.

Output Cut 15%

A 15% cut in the weight of current aircraft production has just been announced by the Army Air Forces to govern output during the remainder of the year. The new schedule will permit concentration on B-29s, B-32s, A-26s, P-80s, C-82s and C-54s. In no case will production be cut off immediately, but will taper off during several months.

U. S.-Owned Plants: One of the biggest problems facing the advocates of new transport equipment for the airlines is caused by the fact that the majority of aircraft manufacturing facilities today are Government-owned. If the military authorities decide they can allow some production facilities to be diverted to the manufacture of civil craft, arrangements will have to be made to permit aircraft companies to use Government-owned plants, equipment and even materials for commercial purposes.

*Trend of
The News*

Surplus Inventories: Conferences have been under way looking toward continuation of the practice set up last year whereby aircraft firms were able to clear their plants of large quantities of unusable surplus materials by selling them to the Government at \$1 and having the loss absorbed through tax adjustments. There is every indication that this program will be continued.

At San Francisco: Aviation had few spokesmen present in official capacity as the United Nations peace conference opened in San Francisco. Among advisors to the eight-man U. S. delegation named by major Government departments was Artemus L. Gates, Assistant Secretary of the Navy for Air. Charles P. Taft, recently appointed director of the State Department's Office of Transportation and Communications under which falls the aviation division, also was present as an advisor.

While the preponderant influence of air power and air transportation in cementing the peace and the economic relations of all nations in the future is generally recognized, many people in the industry felt that greater attention should have been given to aviation on the San Francisco agenda.

Feeder Planes: Some manufacturers feel that present plans which contemplate release for commercial sale of types of large transport planes now being built for military use, would thus provide equipment for long distance civil routes, but would ignore the need for feeder type planes. Current military needs generally require long range, plus high load capacity, and planes well suited to this purpose are not economically efficient for short range (500-mile) operation. An important part of the air transport industry, it is pointed

(Turn to page 4)

25c

Drawing by Tech. Sgt. Steele Savage,
AAF, from sketch at advance base on
New Guinea by Sgt. George Porter.



"BUSYBODY"

Here indeed is an engine of destruction, a projectile of vengeance, and a "Busybody" of increasing dread in its timely role of grim Nemesis to the ringtail sons of the setting Sun...it's the newest Thunderbolt...the P47 "N". The saga of the versatile Thunderbolt should need no emphasis...since official combat figures from every fighting front stress its dominant performance. >>>

Nevertheless, it is a gratifying fact that from its latest zone of operation in the Pacific, comes welcome news that the increased range, the greater speed, and the tremendous punch of this flying Juggernaut is resulting in more missions flown and more victories per mission...both vital factors to the accelerated tempo of our victory drive towards Tokyo.



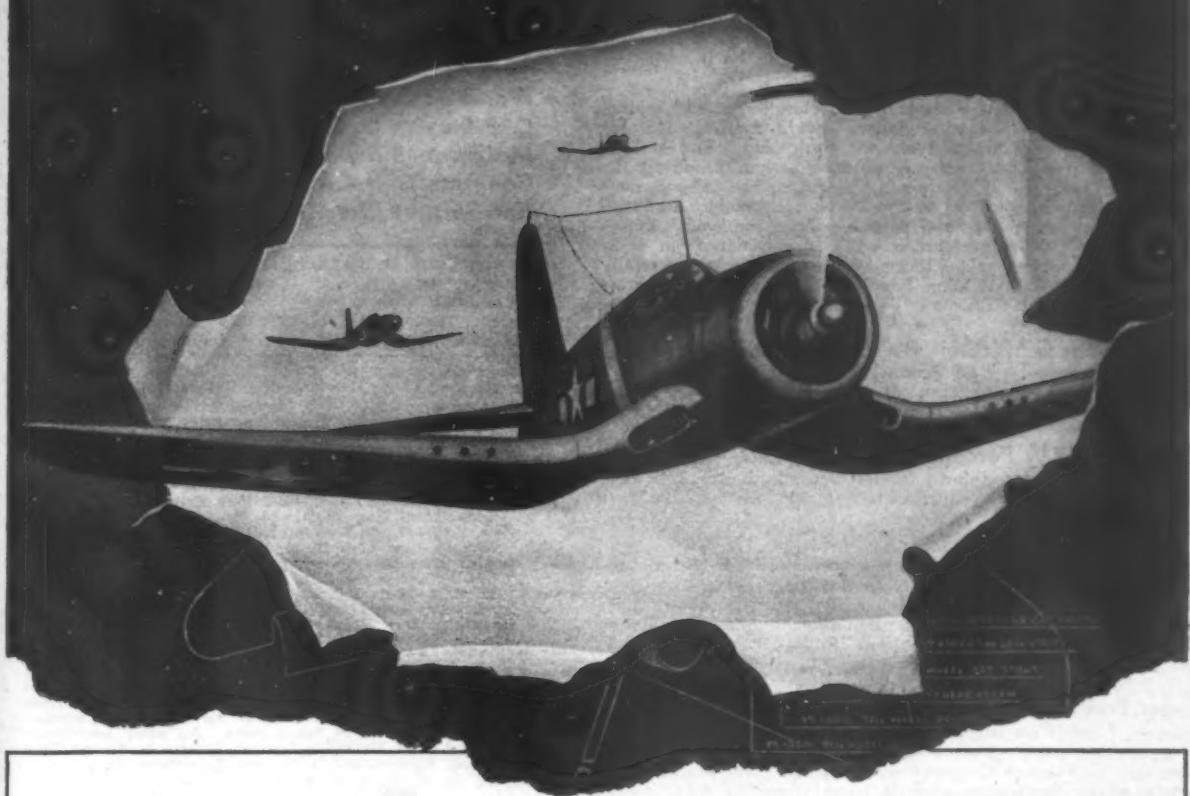
REPUBLIC AVIATION
CORPORATION

Farmingdale, L.I., N.Y.

Makers of the Mighty Thunderbolt

Evansville, Ind.

GOOD YEAR AIRCRAFT PRODUCTION REPORT



CONTRACTS: NOASI871-99529 - NOAS951

CORSAIR FG-1

COMPLETE AIRPLANE
AND SPARE COMPONENT PARTS

CONTRACT RECEIVED: FEBRUARY 1942
FIRST PRODUCTION UNIT COMPLETED: FEBRUARY 1943
1000TH PRODUCTION UNIT DELIVERED: MARCH 1944
2500TH PRODUCTION UNIT DELIVERED: JANUARY 1945

REMARKS: At the time the contract was undertaken, Goodyear Aircraft Corporation did not have a plant large enough for this giant job. Yet within one year a modern conveyor-line assembly plant was erected and tooled, 10,000 employees trained in quantity production techniques, and the first unit completed. In the second year, output was increased to several hundred finished aircraft and spare components per month. During this period, the plane was modified to reflect combat experience involving many improvements which were incorporated. Yet the flow of aircraft was maintained in accordance with Navy expectations.

Goodyear builds components for 16 different types of Army-Navy aircraft, including complete airships as well as the Corsair.



GOODYEAR AIRCRAFT CORPORATION, Akron, Ohio

Litchfield Park, Arizona

(Continued from page 1)

out, however, will be the more numerous short routes which would develop and feed traffic to the long ones. The exponents of this plan say that it seems that a balanced development would require concurrent release of facilities permitting airline procurement of modern short range equipment. Two years is an average period required for development and beginning production of a plane of this class. This means that, if minimum facilities are released now for engineering and experimental construction of modern short range transports it would be at least two years before these planes could be in use.

Export Outlook: As a result of its declaration of war against the Axis, Argentina is casting glances toward the United States to obtain surplus planes and aircraft equipment. The outlook for sales of new U. S. aircraft products, when produced for commercial use, also is brightening in Argentina. The barrier against Argentina applying to the Foreign Economic Administration for surplus planes and parts has been removed. Applications from that country now will be considered on their merits on the same level as those from other countries friendly to the Allies. The situation has been clarified by the State Department and the FEA.

Swedish Feeder Plane: The Swedish aircraft industry, SAAB, is reported to be producing a twin-engine passenger plane for feeder line service. It is said to be similar to the Douglas DC-3 and carries 18 to 20 passengers.

Fares Cut 27½ Percent: Swedish Air Lines (A. B. Aero-transport) has reduced fares on its domestic routes 27½ percent. This substantial reduction means the railways will have stiff competition.

U. S. Safety: Much concern has been caused in Britain recently by the high accident rate in the R.A.F. Transport Command. It has been pointed out that by taking passenger miles from 1938 to 1943 as a basis of calculation, for each fatality on private enterprise airlines in the United States the R.A.F. Transport Command had 80 fatalities.

Long Trek for Parts: Another headache caused by the merry-go-round on surpluses centers on efforts to obtain surplus aircraft parts. Following an announcement by the Reconstruction Finance Corporation that plane owners and others interested in purchasing aircraft parts from the RFC should communicate with the Surplus Aircraft Division, many such inquiries poured in. Although the RFC pointed out that only a small quantity of parts have so far been declared surplus, prospective purchasers have been irked by red tape. They have been referred by the RFC to the War Department at the Pentagon, then to Wright Field, and from there the search goes on to Army warehouses throughout the nation. In certain instances when would-be purchasers knew the number of the part and in what Army depot it was stored, he has been able to obtain it without too much "cooling of heels." Most observers believe the situation will get better as more parts are released by the Army.

Loading Vehicles: Airlines serving islands in the South Pacific are planning to use ducks, alligators and similar amphibious craft to enplane and deplane passengers on postwar flying boats. The flying boat would put in at a buoy offshore. Passengers would board the duck or alligator on dry land and be driven out through the surf and transferred to the plane. Disembarking passengers would be similarly taken ashore. Big advantage of the plan is that it eliminates the need for docks, can be used where the shoreline is not suitable to building docks, and permits the flying boat to remain offshore away from surf, reefs and similar hazards.

Careful Handling: An example of the trend by airlines toward better handling of press relations and notification of relatives of passengers at time of accidents was demonstrated by Pennsylvania-Central Airlines when a plane was lost recently near Morgantown, W. Va. PCA promptly and accurately kept both news people and relatives informed.

American Aviation

The Independent Voice of American Aeronautics

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May 1, 1945

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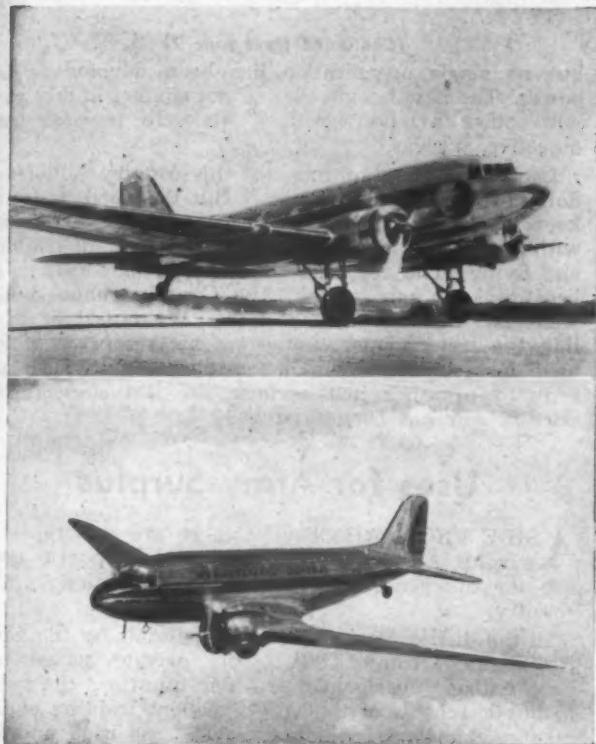
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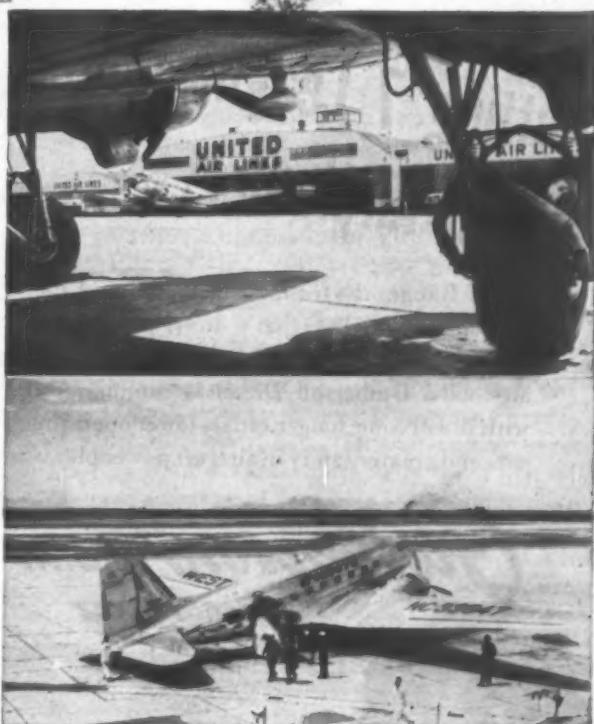
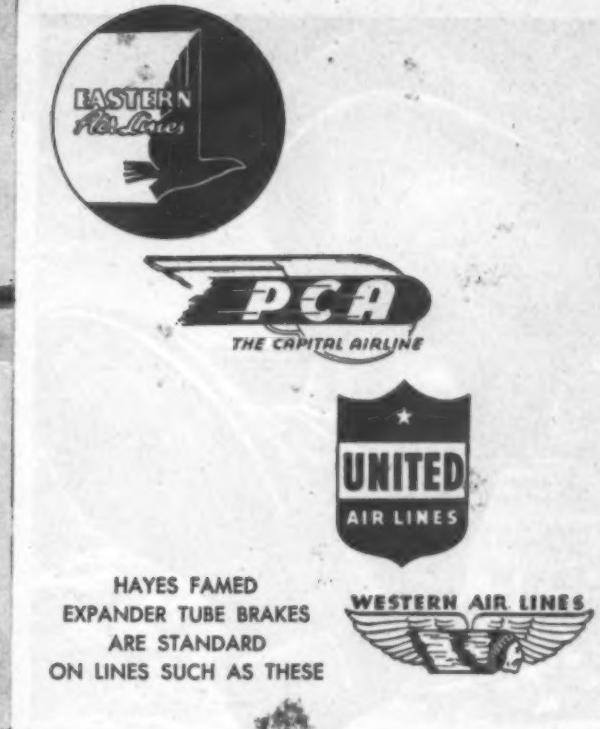
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Producers of Aircraft Diesels, Aircraft
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America's Radial Air-Cooled DIESEL Engine

(Continued from page 1)

but no single organization has been devoted to air power. The new League should not conflict in any way with other aviation groups. Its sole purpose and objective is clear.

Lack of preparation has cost this country billions of dollars in the past few years. But the need is not to keep the country on a wartime basis, but to keep apace with the world in research, experimentation, training and flying. The new age of jet propulsion itself is of breath-taking importance. The Germans have shown what can be done with rockets. We must see to it that the tremendously important air resources which have been built up with astonishing rapidity are not reduced to ashes just because the last shot in the current war has been fired.

Uses for Army Surplus

ASIDE FROM AIRCRAFT, there are two types of surplus Army material that could be put to good use for the general advancement of aviation in the country.

In the distribution of training materials by the Civil Aeronautics Administration, the private school has been entirely overlooked. No one questions the value to public schools of the very excellent training equipment and material which the AAF has used and for which it has no further use. But unless a brake is applied, a very large quantity of this material is going to rest in storage in the basements of public schools which are not equipped to use it to advantage. In the meantime, the private aviation schools upon which the Army Air Forces leaned so heavily in its pilot and mechanic training programs, could use the material to the general benefit of everyone concerned. Most of the schools, at least, would be glad to pay a nominal sum for it.

In another surplus category are quantities of portable airport lights, wind tees, hangars, scrapers and other such equipment which could be used to tremendous advantage by small airfields. George Crockett, owner and manager of the Alamo Airport at Las Vegas, Nev., has proposed that the Government lease this equipment to local airports which can't by any stretch of the imagination purchase new equipment. Maintaining existing fields and the stimulation of new construction is in the national interest. We suggest to the AAF that it can help itself as well as all aviation by working up some type of reasonable leasing arrangement for small airports and airfields around the country. This seems to us to be a very practical approach to this important surplus problem, a long-range approach which would please the taxpayer and advance the entire field of aviation.

Commendable Reduction

EFFECTIVE APRIL 1 the air mail postage on first class mail to most Latin American countries was cut in half. This is a real contribution to trade, for the air mail postage rates to the south have been far too high in the past. Even the new rates leave something to be desired, but the reduction should mean a much greater flow of letters. In a few years these rates should be reduced to a level not much above the domestic air mail tariff.

(Turn to page 9)



ANOTHER MARTIN FIRST!

It's simple to dimple hard and brittle sheet metal with the Martin Spin Dimpler. Adaptable to any drill press capable of 15,000 R.P.M., the new tool may be used by semi-skilled or even unskilled workers.

Putting Dimples in Tough Faces

. . . with the new
Martin Spin Dimpler!

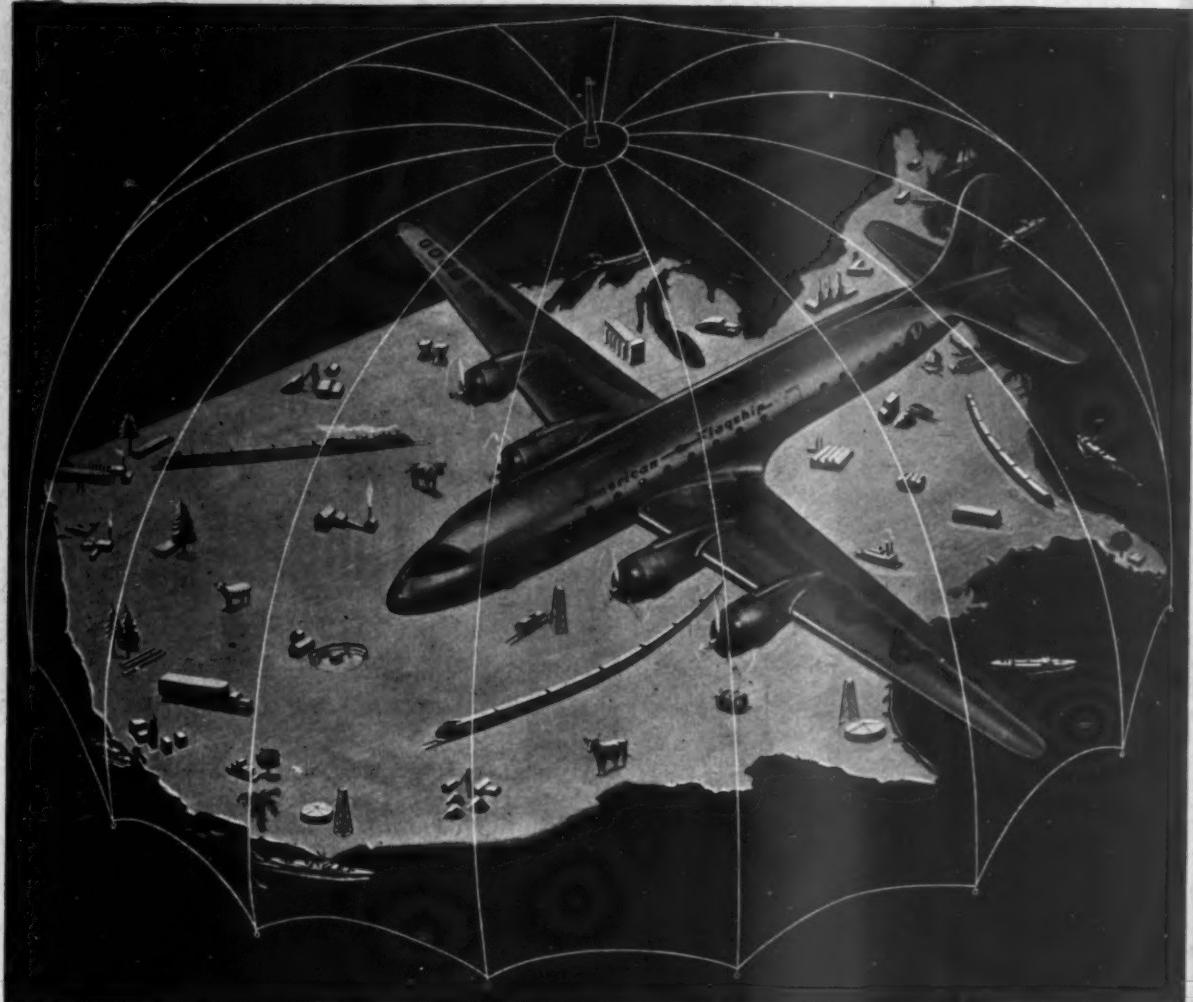
NO problem, now, is the dimpling of hard and brittle sheet metals, such as Reynolds 301-T, Alcoa 75-ST and the magnesium alloys. Thanks to a new Martin tool . . . the Spin Dimpler . . . these metals are being dimpled as quickly and easily as softer alloys.

The Spin Dimpler has been used at the Glenn L. Martin Co. to form 100 degree dimples for 3/32, 1/8, 5/32 and 3/16 diameter rivets in both aluminum and magnesium alloys varying from .020 to .064 in thickness. In the case of aluminum, a lubricant . . . Tycol-655 . . . is used.

A product of Martin Engineering, the new tool forms dimples by spinning rather than by pressing them into shape. Trimmer cutting edges remove any metal which is extruded upward and a pressure pad assembly holds sheet in place during the process. Dimples feature a sharp edge, leaving no void around the rivet head, and resist corrosion as well as do machine counter-sunk holes. The Spin Dimpler is now being manufactured, under license, by Topflight Tool Co., Towson 4, Md. and Schaefer Machine Co., Inc., 100 White St., Brooklyn 6, N. Y.

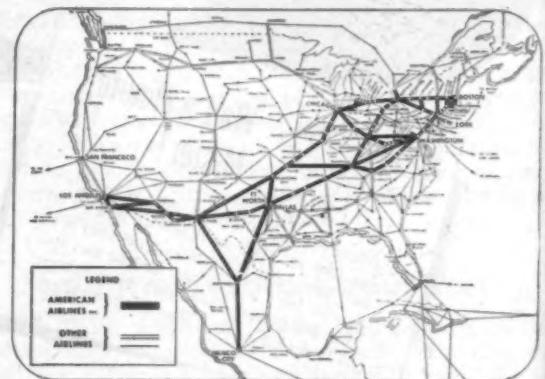
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GLENN L. MARTIN-NEBRASKA COMPANY—OMAHA

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Now, what we accomplish upon land depends largely upon our nation's air "coverage." This is as true for peace as for war. Every form of transportation, every industry and profession, and every commercial and cultural activity in the U. S. will be benefited and protected only to the extent that our air umbrella is adequate.



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Make Signs Clear

A CONSTANT complaint by foreigners visiting the United States is the lack of clear and understandable signs in buildings, transportation terminals and streets. Not only are there not enough signs of the right type to provide directions for strangers, but often the English used is not clear and simple.

As air transportation becomes more international in scope and outlook, the industry should take the lead in providing clear directions to the uninitiated. We should remember, too, that there are millions of Americans who aren't used to the routine procedures of traveling by air. Too often the counter people take it for granted that the customer knows his way. There is a natural timidity about Americans, anyway, when it comes to new and untried things. A thorough survey should be made of every important airline terminal to determine if there are adequate and understandable signs, and some thought might be given to posting a complete set of guides in various foreign languages.

Another complaint by those who know just enough English to get by in this country is the slurring of

announcements over loudspeakers. Some of the girls now doing the announcing are difficult to understand at best. When they get going on the microphone you'd think they were trying to establish speed records. Giving thought to making the routine of air transportation easily understood to the stranger—both native and foreign—will pay dividends.

WAYNE W. PARRISH

Why We Envy South Africa

THE FOLLOWING dispatch from Capetown, South Africa, was published in the March 24 issue of *The Times* of London:

"The Southern African air transport conference will end tomorrow, the closing plenary session having been adjourned today to enable the delegates to visit the cellars of the Cooperative Winegrowers' Association."

It is a warming and comforting thought that postwar global air transportation may bring the nations closer together. Let's get that air service started to Capetown right away.

Clears Away Misunderstanding

61 Broadway,
New York City,
March 30, 1945.

To the Editor:

On April 1, *American Aviation* carried a news item, containing a statement by Mr. L. Welch Pogue, Chairman of the Civil Aeronautics Board, which apparently "took issue with a conclusion reached by the Argus Research Corporation" on future airline passenger rates. In view of the numerous inquiries received from our clients, the airlines and others interested in air transportation, I wish to clear away any misunderstanding which may have developed from one phase of our study on "Airlines Destined for Sound Growth."

At the outset, I wish to disavow the conclusion ascribed to Argus Research and denied by Mr. Pogue "that the CAB had established a policy of placing a floor under airline passenger rates." At no time in our study was this policy attributed to the CAB, and in my opinion, the assumption is not fair to our organization. The single reference to a "floor" on passenger rates was contained in a comparison of airline and railroad passenger rates in which the statement was made, and let me quote, that "in effect the railroads are placing a 'floor' on airline rates, which will inevitably lead to a strong pressure on railroad business." The application of the term "floor" is unmistakable, and it characterizes our judgment of the extent to which airline rates can decline without "descending far below those charged by the railroads for first class travel."

I believe the reported disagreement with Mr. Pogue emanates primarily from expressions of opinions where there is no identical ground. Mr. Pogue apparently is denying an "established policy" or the setting of a "floor" on passenger rates on its own initiative. Our views involve a matter of "degree" or the distance in which airline passenger rates can decline in relation to Pullman rates. We have our attention drawn to the Pullman first-class fares, which are now close to and in many cases above the pending new airline rates, and we attempt to gauge the "degree" of any further decline in airline passenger rates be-

fore they "would endanger Pullman's rate structures." From this basis, we concluded that "it is our feeling that the airlines will not be requested lower fares but that all companies will reduce them voluntarily and to a degree which may require some restraint from the CAB because of undesirable repercussions which might come from the nation's railroads." The reference to the CAB is strictly as an interloper, if necessary, to prevent serious complications and rate wars with the railroads.

I feel sure that had Mr. Pogue the opportunity to read the complete Argus report on "Airlines Destined for Sound Growth," the distinguished Board Chairman would have been in substantial agreement with the main points in our study. As a matter of fact, our confidence in the conclusion that the airlines are destined for sound growth was based primarily on the regulatory principles laid down by the Civil Aeronautics Board in actual practice and in enunciated policies. Repeatedly, the Argus report commended the CAB for its farsightedness in lowering mail rates, whenever an adjustment in the degree of subsidization became necessary and in the public interest. It hailed the courage of the CAB in lowering mail compensation in 1942 immediately after the severe operating handicaps imposed upon the airlines by the seizure of approximately 50% of the industry's planes. It forecast lower rates, and let me quote directly that "airline rates undoubtedly are destined for lower levels in the post-war years—the industry is well reconciled to a series of rate reductions—representative leaders in the industry talk freely of a reduction in passenger mile fares from 5c to 4c shortly after the war." These statements certainly do not imply that airline rates will be frozen and that lower fares will not be available to the traveling public.

I wish to comment briefly on Mr. Pogue's

statement that the airlines "will generate new traffic—and will not be dependent upon diversion from the railroads for their passenger business." I am fully in agreement with Mr. Pogue on this specific point, but I will go even further and say that the airlines will not only generate new traffic, and will not depend on diversions from the railroads, but in addition, they will obtain "very substantial diversions of passenger traffic from the railroads."

I hope our comments on this issue will prove satisfactory to Mr. Pogue and to our many friends who are vitally interested in obtaining some light on post-war airline rates.

PHILIP J. MAGGIO.

Fair Sample?

715 14th St.
Alexandria, Va.

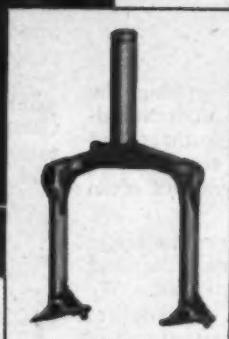
To the Editor:

Many persons have no doubt wondered what was being said by the duelist voiced banishes who makes the announcements in most airports. Wonder no more! Here is a fair sample.

"YOUR ATTENTION PLEASE. The Super Duper Airline announces the arrival of the Super Luxury Liner, Flight 26 from New York, New Haven, New London, Boston, Baltimore, Philadelphia, Harrisburg, Pittsburgh, McKeesport, Newark, Providence and Keokuk. Super Luxury Liner Flight 26 will be on the ground for approximately ten minutes and will depart for Washington, Alexandria, Stafford Courthouse, Fredericksburg, Ashland, Richmond, Petersburg, Raleigh-Durham, Columbia, Jacksonville, King Beach, Queen Beach, Prince Beach and points south, with connections for Atlanta, Little Rock, New Orleans, Houston, Dallas, Galveston, Los Angeles and Biloxi. Deplaning passengers may claim their baggage by giving their baggage checks to the sky caps. Transportation to the city may be obtained at the south end of the Terminal Building."

Ten minutes later after listening to similar announcements by Colossus and Stupendous Airlines—

"YOUR ATTENTION PLEASE. The Super Duper Airline announces the departure of the



A BOMBER'S "FEET" DEPEND ON THIS FORK!

One of the highly essential precision items produced by the Welded Tubular Assembly Department of Aircraft Mechanics, Inc., is the "Beech Fork," used on many bombers serving our armed forces.

All tooling necessary for large quantity manufacture of the "Beech Fork" was produced in the Tool and Jig Departments of Aircraft Mechanics, Inc.,—and schedules have been maintained as promised.

Our Engineers, Designers and Production Crews now are engaged 100% in the production of this and other highly essential welded tubular assemblies for many of the major aircraft manufacturers. In addition, our Airforce Division is producing tens of thousands of high tensile steel forgings for more than fifty aircraft manufacturing firms.

If you need additional facilities for the manufacture of welded tubular assemblies or forgings, it is probable that we can help you. Write us, today, and we will send full information, immediately.

BUY AN EXTRA WAR BOND... TODAY


*** AIRCRAFT MECHANICS INC.**
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Super Luxury Liner Flight 26 to Washington, Alexandria, Stafford Courthouse, Fredericksburg, Ashland, Richmond, Petersburg, Raleigh, Durham, Columbia, Jacksonville, King Beach, Queen Beach, Prince Beach and points south with connections for Atlanta, Little Rock, New Orleans, Houston, Dallas, Galveston, Los Angeles and Biloxi. Flight 26 is now loading at gate seven. Go down the stairway at the north end of the building. Turn left at the bottom of the stairs and go thru the swinging doors. Please give your loading pass to the agent on the ramp. All Aboard pul-ease."

All very commendable except that the passengers don't listen and nobody else gives a damn.

DAVID A. ROHR

Agrees 100 Percent

Des Moines, Iowa
March 2, 1948

To the Editor:

I want to compliment and congratulate you upon the excellent editorial in the March 1 issue of the *American Aviation*—"Let's Start Building." Having attended the CAB hearings and having read the reports of the hearings in your publications and others, I certainly agree with you 100 percent. Your courage and forthrightness in so forcibly expressing yourself should have influence on some of the executives of the airlines and others who have been short-sighted, as you point out.

ARTHUR L. BOREMAN
Arthur L. Boreman & Sons

'Hat is Off'

Dallas, Texas
February 26, 1948

To the Editor:

We all must admit that conventions and conferences are very profitable. After reading each issue of *American Aviation* I feel that I have attended an aviation conference or convention and I know I receive equal benefits.

It is so easy in these times to not "give credit where credit is due" and too few of us compliment the deserving. My hat is off to *American Aviation*.

HART BOWMAN
Supervisor of Aviation
City of Dallas

New Booklets

The fundamentals of financing airplanes are not greatly different from those established in the automobile business, according to "Aircraft Financing," a new handbook and manual just published by the Consumer Credit Committee of the American Bankers Association. The booklet, which is obtainable on request from ABA headquarters, 20 E. 40th St., New York 16, N. Y., is interpreted as recognition by the banking world of the airplane as a popular privately owned vehicle to be merchandised in the manner of automobiles in the postwar period.

Curtiss-Wright Corp., Airplane Division, Kenmore Plant, has issued a training text on spotwelding entitled "Spotwelding Takes to the Air." The book was developed for use in Curtiss-Wright's Training Department, and is profusely illustrated with cartoons. Every phase of spotwelding and the procedures for its use are discussed.

Aeronca Aircraft Corp., Middletown, Ohio, has issued a 28-page illustrated booklet titled "Why You Should Be An Aeronca Dealer." It contains specifications and pictures of the postwar Aeronca planes, a brief history of the company, and case histories of experiences of prewar Aeronca dealers.

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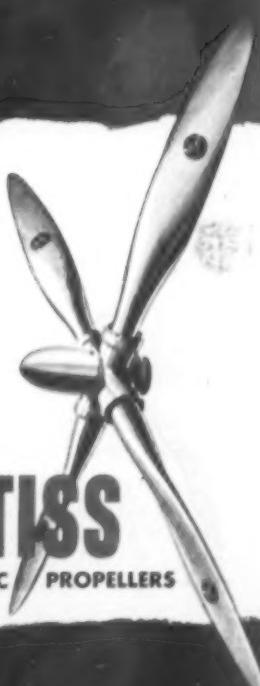


Hauling the Load over the HUMP

Air Transport Command operations in the China-Burma-India area have become a symbol of reliability and endurance, both of men and equipment—a reputation built on day-in, day-out, all-weather flying over the world's roughest terrain, often under attack. The performance of Curtiss Propellers on C-46 Commandos along this aerial Burma Road typifies their dependability in air transportation.

Curtiss-Wright Corporation, Propeller Division

CURTISS
ELECTRIC PROPELLERS

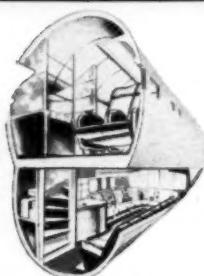


Stars in the sky...The Stratocruiser

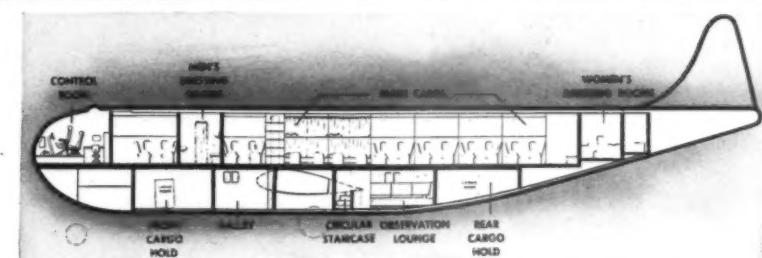


A great airplane
that flies first on
CHEVRON
AVIATION GASOLINE

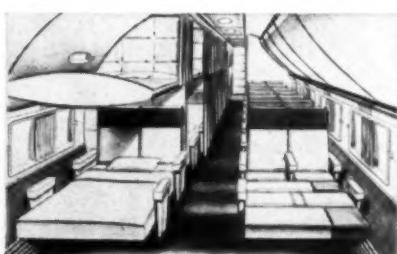
COAST TO COAST between
lunch and dinner is the pattern
set for postwar air travel by
Boeing's new Stratocruiser.
January 9 its military proto-
type, the C-97, sped from
Seattle to Washington, D. C. in
6 hours, 3 minutes, 50 seconds,
a new transcontinental record
—flown on Standard aviation
fuel and lubricants.



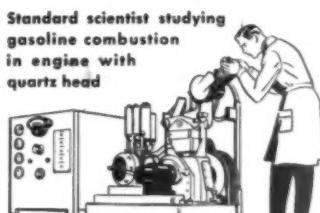
"SIAMESE TWIN" FUSELAGE permits
luxurious lower deck dining-observa-
tion lounge. New high-octane fuels
developed by Standard helped make
possible big engines which give Stratocruiser high speed, huge capacity.



ROOM FOR 100 PASSENGERS and plenty of cargo in Stratocruiser. A direct outgrowth of B-29, it has top speed of 400 mph, range of 3500 miles. All present models built will go to military, and each one will leave assembly lines with tanks full of Chevron Aviation Gasoline. Boeing has used Standard aviation fuel exclusively since 1915.



FOR NIGHT FLIGHTS the Stratocruiser sleeps 36 and can carry additional passengers in lounge. The cabin is pressurized so that travelers in the big ship can cruise in comfort at high altitudes.

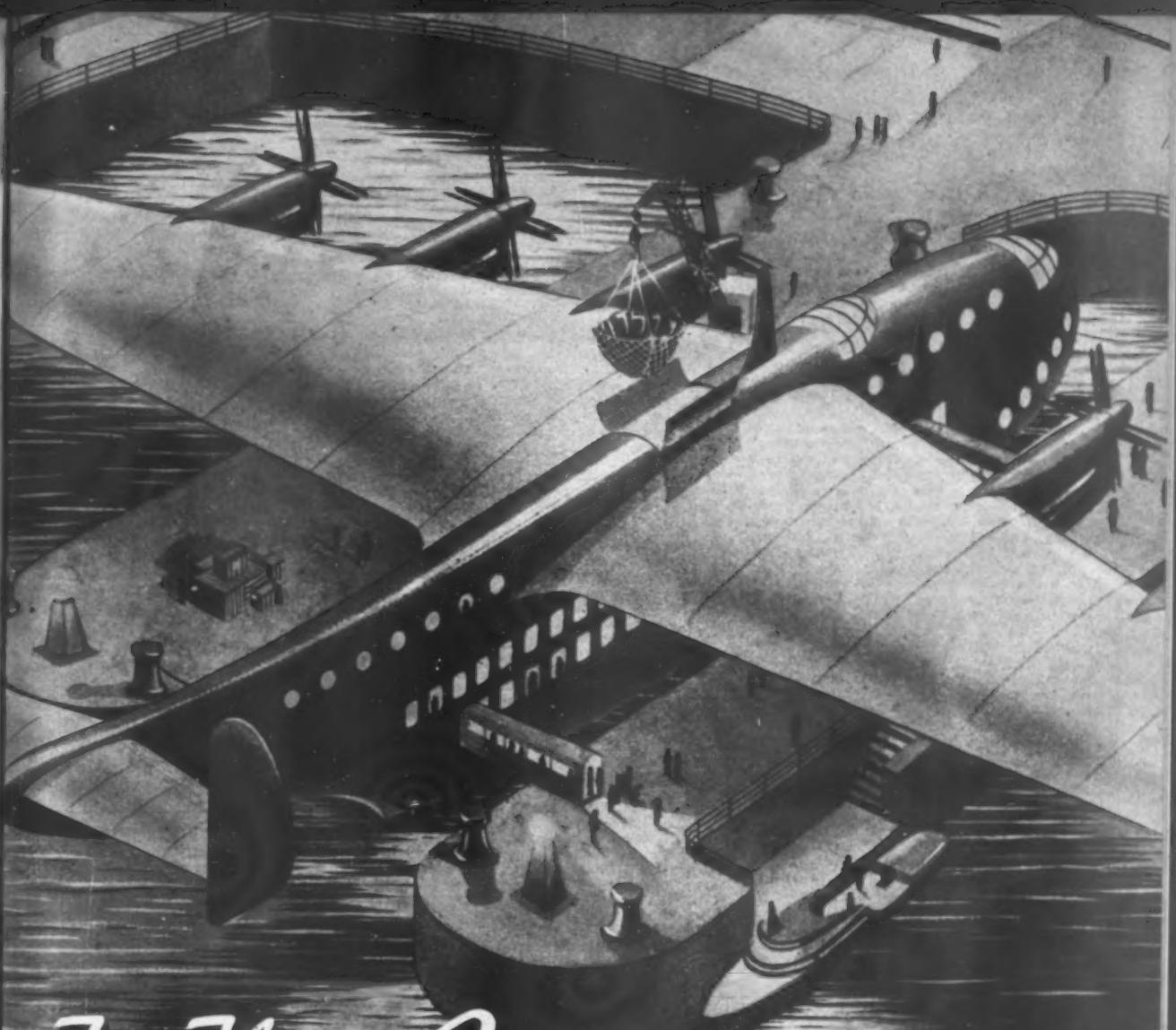


Standard scientist studying
gasoline combustion
in engine with
quartz head

FOR PRIVATE FLIERS Standard Engi-
neers have perfected new aviation fuels
fitted to the special requirements of light-
plane engines. They're designed to make
your postwar plane, too, a star in the sky.



STANDARD
OF CALIFORNIA
San Francisco, Calif.



For Flying Boats

ROTOL
AUXILIARY GENERATING
PLANT
FOR ALL ELECTRICAL SERVICES

ROTOL LIMITED . . . ENGLAND
AIRCRAFT & MARINECRAFT PROPELLERS . . . AERO AUXILIARY EQUIPMENT

Books

THE AIRMEN'S ALMANAC. Edited by Francis Walton. 1943 Edition. Published by Farrar & Rinehart, New York. \$12 pp. \$1.

The first edition of this new annual is jam-packed with air facts. Distributed through newsstands primarily instead of to the more restricted bookstore market, and retailing for one dollar, the publishers are aiming for a volume outlet—and may well find it.

The author is well qualified to edit the Almanac. During the past 20 years he has devoted much of his time to aviation writing, first for The New York Herald Tribune, later for Pan American World Airways, and the Aeronautical Chamber of Commerce.

There is ample evidence of an enormous amount of collecting of facts and of research. Primes governmental sources are utilized to a large extent, but it can't be said that the book was a hastily-compiled project. However, one may analyze the book critically, and whatever may be its defects, the fact remains that it is the greatest collection of aviation data yet to appear. A considerable amount of the material has a limited usefulness. Some of it is reference material required in everyday work. It's a big job—and, on the whole, a good job.

On the critical side the specialized reader is likely to find the index much too inadequate. There's a lot of useful material that can't be found quickly by looking up the all-too-few headings. The book might have been better organized by classifying the material under broad general headings, and some of the information shows the signs of age. An airline is listed for Mexico, for example, that has been out of operation under the given name for some time. The Florida Aviation Commission passed out of existence several years ago, but is included

in the book. The difficulties in publishing a book of this magnitude in these days are quite obvious, but a later check on some of the material might have been in order nonetheless.

A good many people in aviation will be surprised at the amount of text material included. Considering the broad market which is being sought, such text material is doubtless justified; it will be of more interest to the marginal fan groups than those within the aviation fraternity. This is the type of book which can easily provoke endless discussions among aviation people. It will satisfy few in its entirety. But the bare fact that it is provoking discussions is evidence that it has made its mark.

W.W.P.

AIR POWER FOR PEACE. By Eugene E. Wilson. 182 pp. \$2. McGraw-Hill Book Company, Inc., New York.

A new importance of civil aviation and aircraft manufacturing to the maintenance of peace is ably presented and sharply emphasized in this book written by the president of the Aeronautical Chamber of Commerce and vice chairman of United Aircraft Corp. This analysis of air power, the author of which has been close to military security matters and aviation for many years, makes a strong plea for aerial strength in the years to follow the end of the present war.

Air Power for Peace gives the reader a quick "brush-up" review of the use of planes in World War I and the years of muddled waters in aviation following that war. Then the author describes the tremendous expansion of air power in the present war and goes on to point out that "the decisive character of air force bids fair to increase rather than decrease, because technology of the air is but upon the threshold of new developments." He foresees an era of air power in peace which will bolster the national economy as well as ward off wars.

Because of its up-to-date treatment and recommendations for the future, the book will find a welcome among many readers, especially businessmen.

W. L. R.

NANCY NAYLOR: FLIGHT NURSE. By Elisabeth H. Lansing. 187 pp. Thomas Y. Crowell Company, New York 16, New York.

This is a fast moving action story of an airline hostess who heard the call to duty and joined the Army Nurse Corps as a flight nurse. The adventures of Nancy Naylor carry the reader through the rigorous two-man training period, the experience of when her ship was torpedoed enroute overseas, and then the heart-warming duties behind the battle lines.

Elisabeth Lansing, in writing this book, has given it the realistic background of war; of split-second timing; of ever being alert; and of drama. There's a tinge of romance in Flight Nurse when Nancy Naylor unexpectedly meets her fiance between bomber missions in North Africa. And then, later, after learning that he was missing, her plane picked him up seriously wounded on the battlefield at Messina, among 15 other German prisoners. Her fight to save his life is packed with emotion.

Flight Nurse will not go down as one of the great books to come out of this war, but it will afford the reader a few hours of light and "true to life" adventure in the life of an army nurse.

M. L. C.

MASTERS OF MASS PRODUCTION. By Christy Borth. 230 pages. Illustrations. \$3.50. Bobbs-Merrill Company, New York.

This is a story of America's war produc-

Wings of Yesterday

Twenty-five Years Ago

The first warrant in the United States for reckless aerial driving was issued in Los Angeles against Omer Locklear. The complainant was the Aero Club of Southern California. (April 27, 1920)

An Orenco "Tourister", piloted by Clarence Coombs at Hazelhurst Field, Mineola, and carrying three passengers, reached an altitude of 6,000 ft. in eight minutes, or 750 feet a minute. (April 29, 1920).

Lt. F. D. Hackett flew from Mather Field to Ream Field, in a D.H.-9 Liberty, a distance of 400 miles, in four hours, en route. (May 1, 1920)

An eclipse of the moon was observed by Lts. J. H. Tilton and W. H. Cuahing of the Naval Station, Rockaway Beach, Long Island, at a height of nearly 2½ miles. (May 2, 1920).

Oregon, Washington & Idaho Airplane Co., Curtiss distributors for Northwest, contracted with the Oregon Journal for the delivery of 300 pounds of newspapers daily to Astoria and Seaside during the summer months, thus enabling the readers to get their papers ten hours earlier. (May 4, 1920)

Fifteen Years Ago

Pan American Airways Inc. inaugurated the first direct air mail service between Miami, Florida and Cristobal, Canal Zone. (April 28, 1930).

The First International Conference on Aviation Lighting was held in Berlin, Germany. (April 28-30, 1930)

President Hoover signed the McNary-Watres Act, which was passed by Congress to stimulate the development of air transport, particularly the carrying of passengers by air. (April 29, 1930).

Jack Barstow established an unofficial gliding record of 15 hours, 13 minutes, at San Diego, Calif. (April 30, 1930)

The New York Glider Carnival was held at Bayside, Long Island, under the auspices of the National Glider Association and the Aeronaautical Chamber of Commerce. (May 1-2, 1930).

Lena Bernstein established a duration record for women, of 35 hours, 46 minutes, at LeBourget, France, in a Farman 192, Salmson motored. (May 2, 1930)

tion and of the men who contributed to success. Among the "masters" portrayed by Borth are J. H. Eindelberger, Glenn Martin, Donald Douglas, Reuben Fleet, Lawrence Bell, Harry Woodhead and other aircraft manufacturers. For the expansion and development of the aircraft industry to meet demands of war production, Borth gives almost complete credit to the automobile industry and its officials.

Obituaries

James H. McKee

James H. McKee, executive engineer of the Curtiss-Wright Corp. Propeller Division, died March 26 at his home in Essex Falls, N. J. He was a pioneer in the development of the hollow steel aircraft propeller blade and probably contributed as much to its development during the past 20 years as any other person.

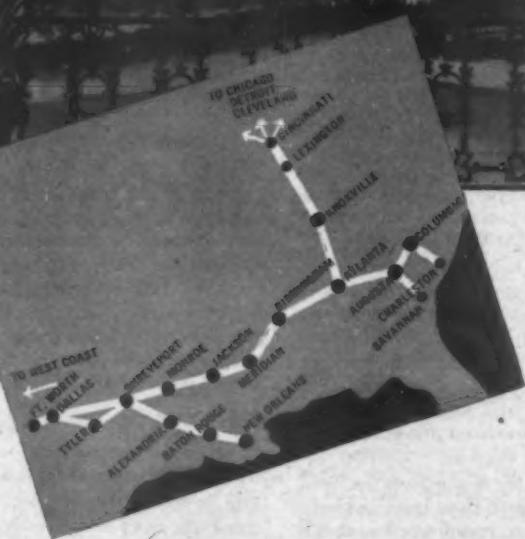
Palmer A. Hewlett

Palmer Adams Hewlett, 54, foreign sales director for Consolidated Vultee Aircraft Corp. died April 8 in Washington, D. C. He was associated with the Curtiss Aeroplane Co. and the Curtiss Wright Co. from 1915 to 1938, when he became vice president and director of the Aviation Manufacturing Corp. and Vultee Aircraft, Inc.

Richard V. Conover

Richard V. Conover, 39, former pilot for Transcontinental & Western Air, Douglas Aircraft Co., North American Aviation, Pan American Airways, and more recently with the Ferrying Division of the Air Transport Command, died last fortnight after a brief illness. He was a native of Lake Charles, La., and a graduate of Louisiana State University.

Southern Charm IN A SKYSCRAPER SETTING



DELTA Air Lines

THE AIRLINE OF THE SOUTH...GENERAL OFFICES, MUNICIPAL AIRPORT, ATLANTA, GA.

▲ A city of diversified charm in a land of contrast ::; that's New Orleans, where the grillwork of early French homes frames a masterpiece of business-world architecture. Down South the ever-changing new stands in relief against the unchanging old. ▲ Today, Delta Air Lines helps speed the war-vital business of the South's new steel mills, chemical plants, shipyards, petroleum plants, bomber factories and textile mills.

▲ In peacetime, Delta courtesy and efficiency will help you enjoy the hospitable, tradition-rich South—land of inspiring historic shrines, ante-bellum mansions, cypress-lined bayous, rich-scented gardens ::.

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Official photo, U. S. A. A. F.

Finish the Fight—with War Bonds

To a finish

Over what is left of Germany, the long, white lances of their vapor trails still streak the frosty sky. For the Boeing Flying Fortresses are doing their part to finish the job with the daylight precision bombing they started in August of 1942.

Day after day and month after month for nearly three years they have kept up their pounding of Nazi factories and communications. The Luftwaffe at its strongest could never turn them back. Fighting through to their objectives in daylight, valiant Fortress crews have dropped their bombs with deadly precision on enemy targets. By helping to smash German airpower at its source

and in the skies, the big bombers saved countless Allied casualties when the time came to invade the Continent.

The "Forts" have earned a place forever in the hearts of Army Air Forces veterans . . . men who have done the flying and manned the guns, trusting their lives to the rugged staunchness of their planes in battle after battle over the Reich . . . and loyal ground crews who have sweated out those missions, praying the big ships in.

The B-17's are going right on with the job. And with their giant brothers, the Boeing B-29 Superfortresses, they'll be striking mighty blows as long as this war lasts.

Today, while other plants continue to build the Boeing Fortresses, all Boeing's own resources and manpower are concentrated on B-29's—meeting the Army's need for bigger, faster, longer range bombers to press the attack on Japan. The B-17's and B-29's represent Boeing's effort to give American airmen weapons worthy of their skill and courage.

When victory is won, the same abilities in design, engineering and manufacture which have established Boeing leadership in the big bomber field will be devoted to peacetime aircraft. You can know of any product . . . if it's "Built by Boeing" it's built to lead.

DESIGNERS OF THE B-29 SUPERFORTRESS • THE FLYING FORTRESS • THE NEW STRATOCRUISER
THE KAYDET TRAINER • THE STRATOLINER • PAN AMERICAN CLIPPERS

BOEING

Airlines Set Up World-Wide Association

Havana Conference Creates Machinery For Solving Global Problems Amicably

By WAYNE W. PARRISH

WORLD-WIDE MACHINERY by which the airlines of the globe may settle amicably and fairly their mutual problems was created at the International Air Transport Conference in Havana during the third week of April.

The International Air Transport Association was formally launched April 19 with the signing of the articles of organization by representatives of 41 international airlines from 25 countries. In addition, there are 17 domestic airline associate members from 11 countries. Herbert J. Symington, president of Trans-Canada Air Lines was elected president, an honorary position.

After a spirited debate the number of members of the executive committee, which will be in charge of management of the association, was determined at nine for the time being. The following were elected to this important group: John E. Slater, executive vice president of American Export Airlines, John C. Cooper, vice president and assistant to the president of Pan American Airways, United States; Albert Plesman, managing director of K.L.M., The Netherlands; Per A. Norlin, president of S.I.L.A., Sweden; Hudson Fysh, managing director of Qantas Empire Airways, Australia; Rene Briand, of Air France, France; A. F. T. Cambridge, of Indian National Airways, India; Maj. J. R. McCrindle, of British Overseas Airways Corp., Britain; and Dr. J. Ento Hibeiro, of Cruzeiro of Brazil, Brazil.

Poland, Czechoslovakia, China and the TACA System were disappointed at failure to obtain representation.

British Come Out Ahead

With three members direct and indirect, the British came out considerably ahead, but the results were about the best compromise that could be found under difficult political situations existing.

The first formal meeting will be held in Montreal this fall, and the executive committee will be expanded probably at that time. Entrance fees were set at \$2000 for active membership and \$500 for associate membership with dues to be determined later. Organization of an International Air Traffic Committee to handle rates, ticketing, advertising and similar matters was authorized.

More than 30 countries were represented by almost 100 delegates at the Conference. Dr. Luis Machado of Expresso Aereo Interamericano was elected president with Cooper and McCrindle vice presidents. Dr. Daniel Goedhuis of The Netherlands and Stuart G. Tipton of the Air Transport Association of America were chosen secretary and assistant secretary respectively. These officers were named to serve only for the duration of the Conference.

The credentials committee was headed Symington, with O. M. Mosier of American Airlines, Norlin, H. Nieuwenhuis of The Netherlands and Dr. Pedro Chapa of Mexico as members.

The drafting committee, which began work at Chicago during the International Civil Aviation Conference last winter, remained as the steering committee.

Not Permanent Organization

The Association still is in preliminary shape and many of the problems were left until a conference can be held after the end of the European war. There was unanimity of opinion on major points and on the desirability of a strong world organization.

More than 30 American representatives attended. No Government officials were present.

It was agreed to have the Association headquarters at whatever city is designated for the world government aviation organization, which probably means Montreal.

The articles adopted for the Association specify that the presidency will be honorary and the election of members of the executive committee will be by individuals rather than by companies. A proposal by the Dutch to elect by companies was defeated.

Transcontinental & Western Air based its claim to eligibility for full membership on it having received from the Civil Aeronautics Board a wartime temporary certificate to operate to Cairo, Egypt, in 1942. The certificate never had been announced publicly and, in fact, was not known to most of the industry. TWA never operated commercially to Cairo under the certificate.

The Conference made it clear that dramp and all other unscheduled or scheduled operators who are not offering full service to the public are not eligible for membership. Many prewar airlines not now operating have been accepted and a date of June 30, 1946, was set as a maximum period of grace to resume operations to retain membership. This will ease the situation of equipment shortage.

American companies accepted for active membership were American, American Export, Colonial, Northeast, Braniff, Northwest, Pan American, Panagra, United, Western and TWA. Associate members are Eastern and Delta.

Those Attending Conference

Representatives, listed by countries and the company represented by each, who attended the International Air Transport Conference at Havana, are:

Australia: Maj. J. R. McCrindle, Australian National Airways.

Belgium: Gilbert Perier, Societe Anonyme Belge Exploitation Navigation Aeriennes "SABENA."

Brazil: Lowell Yerez, Empresa de Transportes Aerovias Brasil, S. A.; Dr. Bento Ribeiro Dantas, Empresa de Viasco Aerea Rio Grandense; Paulo Sampayo, Panair Do Brasil; Dr. Bento Ribeiro Dantas, Servicos Aereos Cruzeiro do Sul.

Canada: H. J. Symington, Trans-Canada Air Lines.

Central America: Edward Scott and Lowell Yerez, TACA Airways, S. A.

China: Col. C. Y. Liu, China National Aviation Corp.

Cuba: Gerald D. Grossman and Dr. Jorge de Cubas, Compania Cubana de Aviacion, S. A.; Dr. Teodoro Johnson and Dr. Luis Machado, Expresso Aereo Inter-Americano; Donald W. Stewart and Mario J. Medina, Standard Oil Company of Cuba.

Czechoslovakia: Dr. Kamil Kleiner, Ceskoslovenska Letecka Spolecnost, and Ceskoslovenska Statal Aerolinie.

Denmark: Knud Lykke and E. Dam, Det Danske Luftfartselskab.

Egypt: Rouschdi Bey, MISR Airlines.

France: Rene Briand, Col. Ferdinand Flacon, and Major Henry Lesieur, Air France.

India: A. F. T. Cambridge and Miss Kathleen E. Phillips, Indian National Airways, Ltd.

Ireland: J. P. Dempsey, Aer Lingus, Teo.

Mexico: Col. Pedro A. Chapa, Compania Mexicana de Aviacion.

Netherlands: Dr. Daniel Goedhuis, International Air Traffic Assn.; H. Nieuwenhuis, L. P. Bouman, and Dr. Albert Slotemaker, K. L. M. Royal Dutch Airlines; Marten H. A. L. de Jong, Royal Netherlands Indies' Airways.

New Zealand: Major J. R. McCrindle, Tasman Empire Airways, Ltd.

Norway: Thomas Olsen, Det Norske Luftfartselskap; P. M. Wilcock, Fred Olsen & Bergenske; Capt. Kristian Ostby, Capt. M. Krog, and Gert Melde, Royal Norwegian Air Transport.

Poland: Dr. H. J. Gorecki, Polish Air Lines (LOT).

Spain: Eduardo Becerra, Compania Mercantil Anonima "IBERIA."

Sweden: Per A. Norlin, Torsten Soederquist, Gunnar Larson, and Tore Nilert, Swedish Airlines A.B. Aerotransport (ABA) and Swedish Intercontinental Airlines (SILA).

Switzerland: Swissair Traffic Company, Ltd.

United Kingdom: Major J. R. McCrindle, N. G. Crudge, W. Branker, and John Stowart, British Overseas Airways Corp.; Eric Leslie, Airways Gandar Dower Ltd., and Allied Airways; P. W. Farley-Jones, C. I. A. T. O.; L. M. J. Balfour, Isle of Wight Airways Ltd., and Portsmouth Aviation Limited; Dennis Handover, Railway Air Services; Duke of Hamilton, and D. F. McIntyre, Scottish Aviation, Ltd.; J. S. Harris, Shell Aviation

(Turn to page 20)

Higher Landing Speeds for Transports Seen

Prediction Contained in Suggested Rule Changes on Airworthiness Just Released

SEVERAL suggested revisions to the Civil Air Regulations on Airworthiness of Transport Category Airplanes which would make possible the certification for commercial use at profitable weights many of the war developed transports including such high wing loading ships as the Boeing C-97 are now being circulated for comment to airlines, aircraft manufacturers, pilots and other interested parties.

The new proposals deal with Part 04 of the regulations, and were drafted by the Flight Engineering and Factory Inspection Division of the Civil Aeronautics Administration. While in general they would permit higher landing speeds and consequently higher wing loadings and bigger payloads, certain provisions would be retained and others added which would definitely limit the extent to which the operators could profitably use the increased wing loadings and landing speeds.

Present Stalling Speeds May Go

The most important proposal from the design standpoint is that to do away with the present maximum stalling speeds of 85 mph in approach condition and 80 mph in landing condition, and letting it be controlled instead by more rigorous rate of climb requirements. These include increasing the minimum rate of climb with one engine inoperative in feet per minute from .02 times the square of the stalling speed in miles per hour in the landing configuration to .04 times the square of that speed for planes used to carry passengers (the present requirement would still apply to all-cargo transports), and placing additional restrictions on the method in which the rate of climb and the stalling speed are determined. Under the new proposal the rate of climb would have to be obtained with the engine cowl flaps in the position which furnished adequate cooling on the standard CAA "Hot Day" (110°F from sea level to 5000 ft.) instead of the position for a standard day, and the stalling speed would be determined from an approach in which the change in airspeed could not exceed 1 mph per second. The reason for the latter requirement is that lower stall speeds can be obtained from a faster rate of approach.

To provide for performance with two engines out on airplanes with four or more engines, a provision which is not covered in the present law, the proposals suggest that all aircraft be required to have a rate of climb in feet per minute with maximum continuous power and wing flaps in take-off position equal to or greater than 10 times the stalling speed for the particular configuration in which the rate of climb is being measured, at sea level. In addition to insuring the ability of the plane to maintain altitude with two engines inoperative, this would also provide for good rates of climb when icing conditions, down drafts, etc., are encountered. There is no similar provision in the present regulations for aircraft in the transport category, although aircraft not in the transport category are required

to have a rate of climb equal to or in excess of eight times the stalling speed for a particular configuration.

Also eliminated would be the present required rate of climb with wing flaps in approach position and one engine inoperative since the purpose of this requirement is closely related to the stalling speed limitation of 85 mph in the approach condition, and it was originally instituted to prevent the use of full flap to meet the approach speed requirement.

Engine cooling tests would be relaxed under the new proposals to the extent that the manufacturer would be permitted to select the airspeed at which the tests are conducted provided that the en route climb required is obtained at a speed not less than that chosen for the cooling tests. At present cooling tests are conducted at the maximum rate of climb. The main thought behind the new proposal is that the speed chosen by the applicant would undoubtedly be as high or higher than that of the maximum rate of climb, and if the plane can meet rate of climb requirements at this speed, there is little to be gained in requiring use of the speed for maximum rate of climb.

A further revision would include permitting roll up to 10 degrees during the pitching of the airplane at the stall, and during the recovery from the stall, provided an adequate stall warning is present at a speed not less than 105 per cent of the stalling speed. This proposal is not related to the stalling speed or rate of climb requirements, but is designed to give recognition to the added safety offered by the stall warning device.

While these proposals would definitely appear to remove certain restrictions on design and to permit higher wing loadings with consequently greater payloads, their effect may be limited considerably by two other governing conditions. These are that the required field sizes for operation of airplanes as a function of stalling speed established in the present trans-

Jet-Assisted Transport Makes Trip Over Pacific

The Naval Air Transport Service's first JATO equipped transport recently completed a round trip test flight between Alameda and Honolulu in what is believed to be the first regularly scheduled transport flight with jet-assisted take-off. The plane, a four-engine Coronado flying boat, carried a load of whole blood on the outbound flight and cargo on the return flight.

At Honolulu with Lt. William Fuller at the controls the transport took off with considerably more than the average gross weight and left the water after little more than half the run usually required. The jet units were fastened under the wing just aft of the inboard engines. After take-off, they were parachuted into the lagoon.

Aviation Calendar

May 1-7—Aviation Week in Boston, beginning with airline luncheon by Chamber of Commerce, May 1.

May 3-4—Air Traffic Conference annual meeting, Chicago.

June 2—Inter-hemisphere conference on frequency allocations and revision, Rio de Janeiro.

June 7-9—Annual convention, Aviation Writers Association, Chicago.

Oct. 31-Nov. 3—National Aviation Clinic, Oklahoma City. Pre-clinic conference Oct. 27.

port category requirements should remain essentially unchanged, and that an additional provision should be made that ceiling and visibility minimums for each particular airplane be made a function of its stalling and/or approach speed. The first of these proposals would definitely limit transports although it might provide some impetus for the development of high performance flying boats where the landing area would be less restricted. The second would leave it up to the airlines to decide whether the advantages to be gained from higher wing loadings and greater payloads warranted the risk of increased weather restrictions.

Other revisions suggested in the Flight Engineering and Factory Inspection division's proposals include attempts to clarify the relation between airworthiness and type certificates, define uses and application of NC, NR and NX certificates, and clarify and expand the application of the category system.

Preliminary Proposals

The present proposals are preliminary in nature and have been prepared for the study and comment of manufacturers, operators, pilots and others. A final proposal will then be formulated by the Civil Aeronautics Administration and forwarded to the Civil Aeronautics Board which it is expected will again circulate the final proposal to all interested parties for comment before final action is taken. The CAA has emphasized that all opinions and thinking regarding this matter be crystallized as soon as possible, since it is aiming at Jan. 1, 1947, as the effective date for the final draft, and it is essential that designers and others planning for the future have the necessary information as soon as possible. It further points out that the proposals are strictly for the revision of domestic airworthiness requirements without regard to what may become international airworthiness requirements. It points out, however, that any revisions which might be agreed upon would quite probably influence the views of United States representatives at the next meeting for consideration of international airworthiness requirements.

The present proposals of the CAA regarding landing and approach speed limitations are quite similar to those they advanced at the time the transport category was adopted. However, at that time they were rejected by industrial and pilots' representatives.

Engine Use Increases 500 Percent As B-29s Become Tested Weapon

By ERIC BRAMLEY

HEADQUARTERS, Twentieth Bomber Command, India—The Boeing B-29 Superfortress has been perfected mechanically to the point where it can be expected to operate at a rate at least as high as that of the B-17.

This opinion has been expressed to this correspondent during a three-day visit to XX Bomber Command headquarters. Brig. Gen. Roger M. Ramey, XX Bomber's commanding general, maintenance and supply officers, and pilots who have flown the B-29 were convincing in their statements that great progress has been made in improving the plane.

Because of the urgency of hitting the Japanese war industry the B-29 went into combat with probably less testing than any other plane built for World War II. The same was true of the Superfort's Wright engines. To bring the plane to the point where it can operate as many hours a month as the veteran B-17 has been no easy engineering feat, particularly when conditions under which operations and maintenance have been conducted are considered.

XX Bomber's move from the U. S. to India was hurried, and many problems were encountered at the new base. Facilities were meager, the supply line from the States was long and sometimes uncertain, personnel was as yet not properly trained (some mechanics called in to work on the B-29 had never seen the plane before) and the weather—intense heat and rain—seriously complicated maintenance work.

To bring into such conditions a thoroughly-tested plane would have been bad enough. To bring in the B-29, as yet untried in combat, presented innumerable complications.

Yet, in its first year in a combat theater, XX Bomber has improved its maintenance proficiency at a rate which is probably greater than that achieved by any other air force in the world.

Great Progress Made

Many of the actual figures on early operations of the B-29, as compared with present conditions, cannot be printed. However, this correspondent can vouch for the fact that great progress has been made.

Structurally, the plane has undergone very little change since being in combat. Officers state that they have never had the trouble that might reasonably be expected to occur in an untried plane.

There has been engine trouble—trouble that presented serious problems. This has been largely ironed out, although some problems remain. No one is inclined to blame Wright Aeronautical Corp. for the engine trouble. As a matter of fact, the engine which, like the plane, was turned out in a hurry to meet combat conditions, was a better than average power plant. Four factors, however, combined to strain the engine to the limit: (1) because of extreme operating ranges, the planes were substantially overloaded, (2) the long ranges necessitated operation of the en-

gines for prolonged periods, part of which was at full military power, (3) intense heat and rain added to both maintenance and operational difficulties, and (4) pilots had not yet learned how to handle the engine to get maximum use and minimum wear and strain.

For a time, XX Bomber probably had more planes out of commission from operational difficulties than from combat damage. Overheating of the engines was one of the biggest problems, and maintenance officers and Wright technical representatives went to work to solve it. The installation of cylinder fins was changed—the cylinder was cast separately, with a grooved outer surface, and aluminum fins were used. Valves were breaking off because of overheating, so valve sleeves were modified to improve lubrication, and a different metal was used to withstand the heat. Improvements were made in the cooling system, baffle plates and shortened cowl flaps were installed. Exhaust collector rings were changed.

Modifications Successful

The results of the many modifications have been very satisfactory. In the beginning, it was necessary to remove most engines from the planes before they had run 100 hours. Now, however, engine use has increased 500 per cent and will increase further.

Summed up, the problems that contributed to XX Bomber's early difficulties were: (1) shortage of spare parts and ground maintenance equipment, (2) shortage of engines and engine cylinders, (3) failure of propeller governors, (4) failure of engine collector rings, (5) shortage of service group machine shop equipment, (6) shortage of night lighting equipment and power units, (7) dirty gasoline, (8) shortage of propeller balancing equipment, (9) shortage of trained personnel, and (10) intense heat, rain and dust.

Most of these problems now have been solved. The last one—heat, rain and dust—can never be completely solved. Dust has been combated by utilization of used engine oil, but the heat still hampers work. At some hours of the day, when the temperature may reach 120 in the shade, it is impossible to touch a plane without being blistered. The humidity caused corrosion and fungus growth on electrical and radio equipment—equipment just received from the U. S. in tropical packs. Packs have been improved and the trouble eliminated.

Results of the maintenance and engineering officers' work have been reflected in XX Bomber's operations. In January, 1945, the Command flew as many missions as it had in its entire first three months of operations, and about 10 per cent more sorties. Tonnage of bombs dropped in January was about 50 per cent greater than the total for the first four months. Also, in January, the average number of hours planes were out of commission for each hour of flying time was one-third the ratio for June,



Civilian Wins Air Medal—

Herbert O. Fisher, globe-trotting Curtiss-Wright Corp. test pilot who is credited with smoothing out flight operations over the "Hump" during 10 months in the China-Burma-India theater, has become the first living civilian pilot to be awarded the Air Medal. He is shown receiving the award from Lt. Gen. Harold George, commander of the Air Transport Command.

1944. And, in recent months, the type of B-29 now used on combat missions flew more hours than B-17s have been averaging in other theaters.

Much of the credit for the excellent maintenance jobs on B-29s goes to Col. C. K. Moore, deputy chief of staff for maintenance and supply. Lt. Col. J. R. Byers, chief of the supply unit, has devised a "spare parts control system" based on an accurate record of parts consumption, and is credited with cutting through much red tape to keep the B-29s flying. Technical representatives of Boeing, Wright, U. S. Rubber, Jack and Heintz and Minneapolis-Honeywell also have worked many hours daily improving the plane.

So, in a comparatively few months, the B-29 has emerged from the untried stage and become a tested weapon of war.

New Form of Propulsion Foreseen in Transports By TWA President Frye

A 50 to 100 passenger transport plane for international operations using a new form of propulsion is envisaged as being possible within six to eight years by Jack Frye, president of TWA.

Frye, testifying before the Senate Commerce Aviation subcommittee, said that this plane would probably cross from New York to London in six hours and might make possible the \$100 fares which have been predicted for the postwar era.

The airline official indicated that this development might make the 150 to 200 passenger, conventional-powered types, now on the drawing boards, impractical as their best Atlantic crossing time would be initially around 12 hours, with a possibility of reducing the travel time to nine hours later. He said the trend might well be toward these smaller types, as it is considered possible that they will be from 33% to 50% more economical to operate.

Civil Air Regulations Modified for Large Non-Transport Craft

The Civil Aeronautics Board has announced the amending of the Civil Air Regulations to modify performance requirements for multi-engine aircraft not certificated in the transport category. Under the amended regulation the weight of any multi-engine airplane manufactured pursuant to a type certificate issued before Jan. 1, 1941, may be increased beyond the values corresponding to the specified landing speed and take-off requirements subject to certain conditions.

These include that the increased weight shall be known as the provisional weight and shall be the maximum permissible weight for take-off, while the standard weight shall be the maximum permissible weight for landing; compliance with all requirements other than landing speed and take-off, except that the provisional weight may exceed the design weight on which structural loads for landing are based by not more than 15% provided that the plane is shown capable of withstanding the ground or water shock loads incident to taking off at the provisional weight; that the plane is provided with suitable means for the rapid and safe discharge of sufficient fuel to reduce it from the provisional weight to the standard weight.

In no case shall the provisional weight exceed a value corresponding to a landing speed of five miles per hour in excess of that originally specified, a take-off distance of 1500 feet in the case of landplanes, or a take-off time of 60 seconds in the case of seaplanes. Nor shall any provisional weight authorized for any type of plane after Jan. 1, 1945, exceed the value corresponding to a rate of climb of at least 180 feet per min. at 5000 ft. under certain specified conditions.

The new provisions apply to the DC-3 and the Lodestar since these types have not been certificated in the transport category and may permit some weight increase with the latter. The main effect, however, will be on private operators, since these requirements have been available to carriers for some time, although the carriers will be affected by the rate of climb provision.

Washington to Cairo TWA Permit Revealed

Developments at the International Air Transport Conference in Havana brought the disclosure in Washington of previously restricted information that Transcontinental & Western Air was granted a temporary wartime certificate to operate between Washington and Cairo Jan. 16, 1942. TWA has never flown the route commercially.

The certificate was granted after a closed door hearing at the request of the War Department, which held that the national defense required it. The certificate is subject to cancellation by the Civil Aeronautics Board when it is determined that it is no longer required by the national defense.

Willow Run B-24 Production To End by August

The Army Air Forces announces that the already curtailed B-24 bomber program will be further reduced and the output of Ford Liberator bombers at Henry Ford's Willow Run will cease not later than August.

Much of the male labor to be released at Willow Run can be absorbed in other vital war production in Detroit areas, according to the War Manpower Commission.

The Army Air Forces, after consultation with the WMC and the WPB, is engaged in a study to determine whether the facilities in the plant can be adapted to production of other AAF items, it was announced.

Radio Commission Reactivates Five Technical Groups

The Radio Technical Commission for Aeronautics, headed by J. H. Dillinger, chairman of the National Bureau of Standards, has reactivated five of its technical committees, which have been assigned to make studies on the following subjects:

Airborne navigation and communication, ground navigation and communication, test procedures and standards, air traffic control, and miscellaneous technical matters. The committees have been designated according to these subjects.

Under the committee on airborne navigation and communication will come reviews of long and short-range navigational aids and communications, acceptance of standards of SAR form factors, and problems of international distress frequencies.

The committee on ground navigation and communication will work on standardization of VHF ground navigation aids, applications of omnidirectional ranges, pulse beacon navigation aids, establishment of a net of ground direction-finder stations, standards for output of airway approach and airport markers, and identification of broadcast stations.

Subjects under study by the committee on test procedures and standards include development of these procedures with respect to radio equipment operating in frequency bands below 30 megacycles, and those in VHF; factors affecting separation between radio frequency assignments, and standardization and protection of intermediate frequencies in aviation radio receivers.

The air traffic control committee will study currently effective CAA regulations and existing and proposed systems, and will make recommendations for a system for use soon, and for an eventual system.

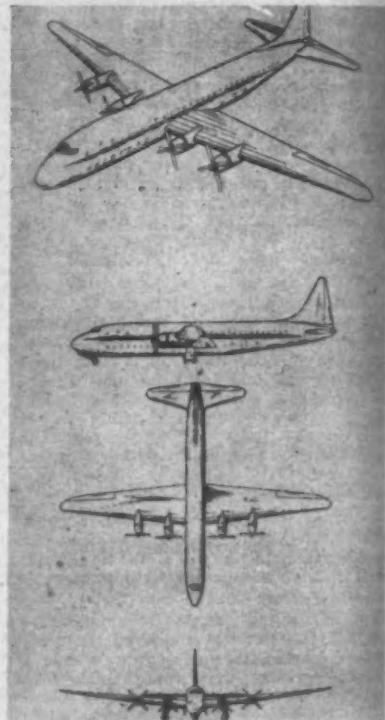
The fifth committee will work on such miscellaneous technical problems as precipitation static, aircraft antennas and electrical systems, reduction of aircraft electrical noise, airport lighting, instrumentation, automatic flight control, suppression of undesirable emissions, and methods of determining operating power of aviation radio transmitters.

Lockheed Engineers Get Design Patent on New 4-Engine Plane

Two Lockheed Aircraft Corp. engineers have been granted a design patent on a new four-engine transport plane, according to the Official Gazette of the United States Patent Office, issued April 10.

The design patent, granted to Hall L. Hubbard, vice president and chief engineer, and Clarence L. Johnson, chief research engineer, has been assigned to the Lockheed corporation. The term of the patent is 14 years.

Drawings of the plane as appearing in the Patent Office Gazette are shown below.



NAA Wants Plane Sales Put in Hands of Operators

A recommendation that the Defense Plant Corp. institute a program whereby the established and organized facilities of aircraft service operators could be used in the disposal of surplus aircraft has been adopted by the board of directors of the National Aeronautic Association.

The NAA also endorsed the proposal of the National Aviation Trades Association that the Civil Aeronautics Act be amended to forbid the economic regulation of non-scheduled aviation operations at this time.

Glass Cloth Hangars

Glass cloth, woven of glass fiber yarns and coated with either synthetic rubber or resin, has been selected by the U. S. Army Corps of Engineers for curtains, side walls and ends in newly developed airplane hangars.

U.S., European Operating Costs Compared

CAB Reveals Airlines in This Country Attained Higher Efficiency in 1937-38

By KENNETH E. ALLEN

A GENERAL COMPARISON of United States and European air transport in the prewar years 1937-38 shows that the U. S. domestic airlines consistently attained lower costs per mile flown, according to a report prepared by the CAB's Office of Air Transport Information.

The study was compiled in 1943 and until last fortnight was restricted.

The comparison of U. S. and European air transport operating costs was based on these four items: Transportation costs, depreciation, other costs and total costs. These in turn were qualified by certain limitations and variables.

The report showed between 1934 and 1938, transportation costs for European airlines increased as much as 90%, while for the combined U. S. domestic lines the increase for the comparable years was 25%, from 37c to 40.5c a mile. The 37c figure in 1934 compared with European transportation costs of \$1.22 a mile. The difference was attributable in the main to the higher costs of fuel and oil in Europe, and to the fact that European flight crews fly fewer miles per year for the same salary than do those in the U. S.

A comparative examination of the transportation costs of various air transport companies in the U. S. and Europe is shown in the following table:

Transportation Costs Per Mile Flown

Airlines	Year Ending	U. S. Cents Per Mile
Deutsche Lufthansa	Dec. 31, 1937	176.8
Air France	June 30, 1938	122.8
Pan American	Dec. 31, 1937	110.8
Ala Littoria	June 30, 1938	101.9
LOT	Dec. 31, 1937	85.4
SABENA	Dec. 31, 1937	79.8
ABA	Dec. 31, 1938	75.9
Swissair	Dec. 31, 1937	53.5
United States Domestic	Dec. 31, 1938	40.5

"It is significant that in addition to operating compact European systems with high frequencies of service, Deutsche Lufthansa, Air France, and Ala Littoria each operate widespread intercontinental networks on which the frequency of service was quite low; in this respect they resemble Pan American," the report said. "The figure for Lufthansa (see table) is much higher than for the others because of the inclusion in operating costs of items which have military and propaganda value rather than commercial justification, and the expenses of repairs and overhauls made for others."

Under the depreciation item, the report noted that in 1934 the depreciation charge for 24 European companies combined was 42c per mile flown, compared to 11c per mile flown for 19 domestic U. S. companies. "This does not indicate necessarily that the European nations follow a more conservative accounting policy. But instead, it reflects the more intensive use of equipment by airlines in the United States, compared with the

airliners of European nations." The following table points up this difference:

Intensity of Use of Aircraft in Typical European and U. S. Air Service

Air Carrier	Miles Flown Per Year Per Plane Estimated In Regular Service
Swissair (1937)	110,000
ABA (1938)	169,000
Imperial Airways (Fiscal year to Mar. 31, 1938)	128,000
Deutsche Lufthansa (1937)	116,000
Ala Littoria (Fiscal year to June 30, 1938)	92,000
Eastern Air Lines	410,000
Braniff Airways	273,000
Chicago & Southern Air Lines	315,000

The report said that the general arrangement of companies with respect to depreciation charges resembles their arrangement with respect to transportation costs. "Pan American and Ala Littoria stand closely together with respect both to transportation costs and depreciation charges per mile flown . . . It is interesting to note that depreciation charges per mile flown on Imperial Airways are just less than one-half those of Pan American." The following table shows depreciation charges per mile flown for the airlines of Europe and the U. S. in 1937 or 1938:

Depreciation Charges Per Mile Flown

Airline	Year Ending	U. S. Cents Per Mile
Air France	June 30, 1938	36.9
Deutsche Lufthansa	Dec. 31, 1937	34.4
Ala Littoria	June 30, 1938	21.6
Pan American	Dec. 31, 1937	24.3
LOT	Dec. 31, 1937	21.4
Swissair	Dec. 31, 1937	20.6
ABA	Dec. 31, 1937	16.6
SABENA	Dec. 31, 1937	13.9
Imperial Airways	Mar. 31, 1938	12.0
United States Domestic	Dec. 31, 1938	7.6

The item, other operating expenses, includes general and administrative expenses, traffic and advertising, and miscellaneous operating accounts, and the report showed that in 1934, other operating expenses amounted to 25 U. S. cents per mile flown for 24 European airlines combined and comprised 13.2% of total operating expenses. For the 19 U. S. domestic airlines (1934) the figure was 8c per mile flown, or 17.9%. The figure in this comparable item has shifted somewhat by 1937-38, however, as shown in the following table:

Other Operating Expenses

Airline	Year Ending	U. S. Cents Per Mile Flown	Per Cent of Total Expenses
Pan American	Dec. 31, 1937	44.0	24.5
United States Domestic	Dec. 31, 1938	10.8	18.3
Swissair	Dec. 31, 1937	12.3	14.3
Air France	June 30, 1938	18.6	10.4
SABENA	Dec. 31, 1937	3.9	4.0
Ala Littoria	June 30, 1938	4.2	3.3
LOT	Dec. 31, 1937	3.0	2.7

The report said the reason that the spread between Pan American and the U. S. domestic companies is "so much wider in terms of U. S. cents per mile flown is that Pan American has a much lower frequency of service than the domestic companies."

"In terms of percent of total expenses,

other operating expenses for the European airlines are much lower than for the United States flag carriers," the report said. "The explanation of this great difference is likely to be found in the different accounting systems used, rather than in inherent differences in the nature and amount of overhead costs. It is likely that the European airlines include part of their traffic and advertising and general administrative expenses among the items which we have classified as transportation costs."

The report said that in 1934, total operating expenses for 24 European airlines amounted to 180 U. S. cents per mile flown, compared to 56c for 19 U. S. domestic airlines combined. "Thus, it appears that in 1934 European airline costs were 3.4 times as high as those of the United States domestic carriers."

Although no figures were available to show the progress of total operating costs of the combined European airlines since 1934, the report noted that Air France during the period 1934-38 showed an increase of 61.4% per mile flown; from 1937 Deutsche Lufthansa's total operating expenses increased by 12.5%, but dropped back to a figure 3.5% below the 1934 level; from 1934-38, total expenditures of ABA decreased by 23.3%.

Total operating expenses per mile flown for the various airlines of the U. S. and Europe in 1937 or 1938 are shown in the table on page 20.

The report emphasized that these limitations and variables were applied in making all of the comparisons between the U. S. and European airlines:

1. When air transport operations are conducted primarily for the interest of national prestige, imperial communications, or military development, costs are likely to be considerably higher than for

Total Operating Expenses
Per Mile Flown

Airline	Year Ending	U. S. Cents Per Mile	Flown
Deutsche Lufthansa	Dec. 31, 1937	311.2	
Air France	June 30, 1938	179.3	
Pan American	Dec. 31, 1937	179.1	
Imperial Airways	Mar. 30, 1938	134.0*	
AIA Littori	June 30, 1938	130.8	
LOT	Dec. 31, 1937	100.8	
SABENA	Dec. 31, 1937	97.4	
KLM	Dec. 31, 1938	93.0	
ARA	Dec. 31, 1937	92.5	
Swissair	Dec. 31, 1937	86.4	
U. S. Domestic	Dec. 31, 1938	58.9	

* Approximate.

a purely commercial operation; 2. Far-flung operations, particularly on an international scale, usually cost more per mile than a closely-knit domestic network with the same number of route miles; 3. Unit costs of operations show a tendency to decline with increasing frequency of schedules, because of the fact that all equipment items, except engines, are depreciated on a yearly basis rather than on hours flown or miles flown basis, and because of more intensive use of flying and ground personnel; 4. The inherent cost characteristics of the type of equipment in use have a direct bearing on overall costs for a company or for a country; 5. International differences in prime costs such as wages, fuel costs and equipment purchases affect the validity of all cost comparisons; 6. Under present international monetary conditions it is not possible to compare with any assurance of accuracy the absolute cost per mile of any two companies operating in different countries, although it is feasible to compare the relation which one cost item bears to total cost in two such companies.

Delegates at Havana

(Continued from page 15)

Department: L. M. J. Balfour, Wrightways Ltd.; J. S. Terment, Shell Mex Oil Co.

West Indies (British): K. T. Murray, British West Indian Airways.

United States of America: W. B. Haggerty, Aero Transport Corp.; M. F. Redfern and Stuart G. Tipton, Air Transport Association of America; Harry Stringer and Charles Wendt, All American Aviation; Orval Moaler and Charles A. Rheinstrom, American Airlines, Inc.; John E. Sister, American Export Airlines, Inc.; Tom E. Braniff, Braniff Airways, Inc.; Edward Ridley, Colonial Airlines; C. E. Woolman, Delta Airlines; Capt. E. V. Rickenbacker, Paul Brattain, Hugh Knowlton, Stanley Osborne and George Howell, Eastern Air Lines, Inc.; G. T. Baker, National Airlines; Samuel Solomon, Northeast Airlines, Inc.; Croil Hunter and William Stern, Northwest Airlines; John C. Cooper, Howard B. Dean, Wilbur L. Morrison and John C. Leslie, Pan American Airways; Harold J. Roig, Pan American Grace Airways; J. H. Carmichael, Pennsylvania-Central Airlines; Jack Nichols, General Thos. B. Wilson, C. de Staelberg, and E. O. Cocke, Transcontinental & Western Air, Inc.; H. Ainsley Highman, United Air Lines, Inc.; L. H. Dwerckotte, Western Air Lines, Inc.; George P. Hinck, State of Massachusetts; Arthur H. Tully, Jr., Mass. Aerodynamics Commission; Guy H. Evans, Douglas Aircraft Co., Inc.; Cyrus T. Helm, Eaco Standard, S. A.; Charles J. Boggs, Fairchild Aircraft; Peyton M. Magruder, Glenn L. Martin Co.; Shepard Dudley and W. F. Tarbox, Intava, Inc.; Leonard Schwartz, Lockheed Aircraft.

Report from Britain

White Paper May be Issue In Coming General Election

Other Topics Discussed In London: Prestwick And Private Enterprise

By JAMES STANTON

PRIVATE ENTERPRISE and Prestwick. These have been to the fore in England's civil aviation discussions for some time. They have been heated discussions, too, but there is every indication of compromise as the solution for both.

Take private enterprise first. Most people interested in air transport in this country expected that the White Paper outlining the Government's civil aviation policy, would open the door to private enterprise. But the door was left only very, very slightly ajar. True, the railway companies have a share in an air transport corporation which will be set up to operate internal and European routes, and a group of shipping companies—British Latin American Airlines—will have a share in the operation of airlines to South America.

But it is felt on second thought that they merely become part of an enlarged chosen instrument of which the present chosen instrument—British Overseas Airways—will be the main factor. Emphasizing the apparent intention of the Government to continue the chosen instrument policy which it adopted in 1939 is the announcement in the White Paper that only BOAC will be subsidized.

There will be a lot of arguing about the White Paper. In Parliament, the protagonists of private enterprise will continue to fight for the independent operators and the Labor group will continue to oppose the limitation of entrants to this new industry to the big financial interests which the rail and shipping companies represent, in the Labor view. Labor members of Parliament seem to throw cold water on the suggestion that the White Paper has Labor's support. What is now evident is that only Labor members of the Coalition Government have given the proposals their approval and such approval cannot be regarded as coming from the Labor party as a whole.

Quick work will be necessary if the White Paper is to be implemented by the present Parliament. There are indications of a general election before the Fall; some politically informed say it will be in the summer, June or July, and the opponents of the White Paper can hold the necessary legislation up, thus making the question a likely issue in the forthcoming election.

The first step for Parliament to take is the setting up of a Ministry of Civil Aviation, which gives Lord Swinton, Britain's first Minister of Civil Aviation, some authority and provides him with a staff.

W. R. D. Perkins, a member of Parliament who for years has been the leading backbender to bring the problem of civil aviation up in the House, is to be Lord Swinton's spokesman in the House of Commons and the Minister's staff will likely be recruited from the present Department of Civil Aviation in the Air Ministry.

Just before the Easter recess of Parliament, the Bill setting up the new Ministry was read a first time and will be debated shortly after Parliament resumes. Its main provisions are as follows:

1.—(1) It shall be lawful for His Majesty to appoint a Minister of Civil Aviation (in this Act referred to as "the Minister") who shall be charged with the general duty of organizing, carrying out and encouraging measures for the development of civil aviation, for the designing, development and production of civil aircraft, for the promotion of safety and efficiency in the use thereto, and for research into questions relating to air navigation.

(2) The acquisition and disposal of aircraft, aero-engines and aviation equipment in discharge of the Minister's said duty shall be subject to the approval of the Treasury.

2.—(1) For the purpose of the transfer to the Minister of functions of the Secretary of State relating to civil aviation, the measures specified in the Schedule to this Act shall have effect subject to the modifications set out in that Schedule.

(2) Any property vested in, right enjoyed by, or liability incumbent on the Secretary of State immediately before the passing of this Act for the purposes of civil aviation shall on the passing thereof and without more vest in or devolve on the Minister.

(3) Any regulation, order, direction, appointment, determination, agreement, requirement, or representation made or otherwise done or proceeding taken by, to or before the Secretary of State before the passing of this Act for the purposes of civil aviation and in force or having effect at the passing thereof shall after the passing thereof be treated as if it had been made, done or taken by, to or before the Minister and shall continue in force or have effect accordingly.

(4) A certificate by the Secretary of State and the Minister that any property was or was not vested, right enjoyed or liability incurred in or by the Secretary of State mentioned in subsection (2) of this section or that anything was or was not made, done or taken by, to or before the Secretary of State as mentioned in subsection (3) thereof, shall for all purposes (including the purposes of any legal proceedings) be conclusive of the matters certified.

The Bill to implement the White Paper has not yet been presented to Parliament. There is no indication that it is ready yet. Following the presentation of the White Paper and his speech in the House of Lords, Lord Swinton left for the aviation conference in South Africa. He has had no time yet to get down to the legislative side of his comprehensive scheme.

It is to be hoped, for Lord Swinton's sake, for he has done much work since his appointment, that the election does not take place too soon; if it is as early

as some prognosticators say, his efforts are likely to come to nought.

The White Paper, almost universally approved and praised on its appearance, does not seem to be favorably regarded by most aviation people or by the trade journals. They see a danger of too much power for the Minister of Civil Aviation and they see the door closed to private enterprise. Perhaps indicative of the outlook is the view expressed in private conversation by several opponents of the chosen instrument.

"What's the change?" they say. "BOAC are pleased with the White Paper so that must mean they have had a say in the compromise scheme and their position is very little changed."

"Coalition Civil Aviation" is the Aeroplane's caption and its argument is that, whatever the politicians say in public, the political parties have reached a compromise on the issue.

From a different viewpoint, the Investor's Chronicle calls the scheme a "Trinity of Monopoly" and says that "Government spokesmen pay lip-service to the need to fight monopoly—and go on producing new monopolies. They talk of the need for restoring free enterprise—and all that they produce is more and more corporations, bastard conceptions leading ultimately to the corporate state."

Prestwick a Gateway

So much for the battle over private enterprise. The next important question concerning civil aviation is Prestwick, an airport known to many American airline men and air travellers. It is realized that this Ayrshire airport has been the gateway of American airmen and machines in the fight against Nazi-ism. It has proved a good airport for trans-Atlantic operations, especially because of its almost perfect weather. But the snag is that it is a long way from London as far as railroad services go and naturally, the powers that be, want Britain's main airport to be in the London area.

Prestwick will undoubtedly continue as a very important airport but it cannot, in the very nature of things, continue as the proud Scots would have it—the main airport of the United Kingdom for trans-Atlantic air services.

Yet there is more to this Prestwick affair than meets the eye. Tied up with its fate is the future of a very enterprising company, Scottish Aviation, Ltd., whose managing director, Group Captain D. F. McIntyre, seems determined to run airlines after the war. This company has made a good job of managing Prestwick airport and doing modification and maintenance work for trans-Atlantic operators. They therefore feel experienced enough to enter the transport field themselves.

There was a debate in the House of Commons the other day on the Prestwick affair. Scottish members of Parliament have taken up the matter as a national question, a sort of fight for a Scottish cause. In fact, one Scot M.P. said he did not know of any subject which had so stirred Scottish opinion. "You have to go back to Bannockburn to find a parallel," he said.

Despite the pleas by the members of Parliament from north of the Tweed, Sir Stafford Cripps, Minister of Aircraft Production, who replied to the debate on behalf of the Government, gave the proud Scots little satisfaction. He said: "The problem of Prestwick is confused,

Miles Aircraft Working on 24-Passenger Plane Comparable in Size to DC-3

MILES AIRCRAFT, British firm, has designed a 24-passenger postwar airliner powered by two Rolls-Royce Merlin engines which will be comparable in size to the DC-3 but is expected to have better performance characteristics.

Designated the M.56, the new transport is a high-wing, twin-ruddered monoplane with tricycle landing gear which is expected to have a cruising speed of 194 mph at 7,000 ft. using only 33% of its maximum take-off power. Normal take-off distance will be 1,260 ft. using 80%

retractable auxiliary airfoil flaps are expected to insure a low landing speed. A special device is provided for applying directional dihedral to the fins, and this together with ample rudder volume is said to insure safety in the event of engine failure at take-off. It would also provide an effective means for trimming for cruising flight with one engine inoperative.

Complete specifications of the M.56 are as follows: Span, 80 ft.; Length, 66 ft.; Gross wing area, 800 sq. ft.; Aspect ratio,



The Miles M.56

power. In addition to the Merlin-powered version, two alternative designs are being considered, one with two Bristol Perseus, and one with four Armstrong Siddeley engines.

Great attention has been paid to providing maximum passenger comfort. The cabin is 30 ft. long, allowing 5 $\frac{1}{2}$ cu. ft. of space per passenger, and can be pressurized to a differential of 2 $\frac{1}{2}$ lbs./sq. ft. Total volume of the passenger cabin is 1,330 cu. ft., floor area is 200 sq. ft., and height at aisle 6 ft. 6 in. Volume of freight, mail and luggage compartments is 100 cu. ft.

The combination of geared engines, low-cruising power and ultra-modern soundproofing technique is expected to result in far lower noise levels in the passenger and control cabins than those in comparable present day transports. The plane of the propellers has been kept ahead of the passenger cabin.

I think, owing to the fact of the type of work that is being carried on there during the war, which has no relationship to the carrying on of an airport at all. When Hon. Members speak of 5,000 people being employed at Prestwick, I would remind them that, for the purposes of an airport, it is estimated that the maximum number employed would

be 200 to 300 persons. The whole of the rest are employed in doing emergency work for war purposes—modifications, adaptations and repairs and things of that kind—which are really a manufacturing job quite divorced from the airport itself. So that there are really two problems here—Prestwick as an airport and Prestwick as part of the aircraft industry in

Estimated performance with Merlin engines: Cruising speed at 10,000 ft. at 33% maximum take-off power, 200 mph; at 43% maximum take-off power, 226 mph; Take-off distance at 26,500 lbs. at sea level with full power, 900 ft.; with 80% maximum power, 1,260 ft.; Take-off over 50-foot obstacle, 1,710 ft.; Initial rate of climb, 1,650 ft./min.; Time to reach 10,000 ft., 6 min.; Maximum still-air range at 23% maximum take-off power with normal tankage and fuel consumption of 475 lbs./hr. or 2.38 lbs./mile, 1,600 miles.

Scotland. So far as Prestwick as an airport is concerned, I think it will be agreed that, in these islands, small as they are for trans-Atlantic trade, in which we contemplate dealing with these immensely big air liners, very much bigger than anything so far seen in the air, one cannot afford to have more than one really first-class airport. It is estimated that a first-class airport, when fully developed, will cost many millions of pounds, and, if it is contemplated, for instance, to develop Prestwick for that sort of purpose, it would, perhaps, mean an expenditure of £6,000,000 (\$24,000,000) to £10,000,000 (\$40,000,000) in order to make it suitable for such a purpose. As the House knows, it has been decided that the Heath Row aerodrome, which is in course of construction and will cost a very large sum of money, is to be utilized as the main central trans-Atlantic airport of this country.

Seen as Alternate 'Port'

"It is a fact that there is a very good weather area on the northwest of England and the west of Scotland, bounded in the north by Prestwick and in the south by Whitehaven, and this is one of the best weather areas in the country. It would therefore appear that, as an alternative airport, Prestwick would be a very suitable one indeed, and it is contemplated, as I think the Minister for Civil Aviation has already said, that one of these alternative aerodromes—it is not quite certain how many there will be—will be Prestwick. That does not necessarily mean that there will be a very large volume of that type of traffic—trans-Atlantic traffic. It will be a standby aerodrome, and, when the weather is bad here, landings will take place up there. It may be that, as we develop fog devices and landing devices, it may be less used in the future than immediately after the war, but, until Heath Row is built, Prestwick will continue to be used for its present purpose.

"That, of course, is not the end of the use of Prestwick. That is only one aspect of Prestwick's traffic. There are two aspects of airport traffic—trans-continental traffic and internal traffic. There is going to be published . . . a study of the internal services, from which Hon. Members will see that Scotland has been very fully covered. Some of them will, no doubt, go to Prestwick. The third category is that of Continental traffic and for that purpose Prestwick will certainly come in. Lines which run from Prestwick to London and on to Paris, Brussels, Berlin or Rome, and other places will be flown out of Prestwick. The exact line and which line will call at Prestwick has not yet been laid down but it is hoped that, as soon as the new organization gets going, it will be possible to lay those lines down. That covers, as far as I can give the House the facts—not that there are any others because these are all the facts there are to give to the House—on the use of Prestwick as an aerodrome."

There will no doubt be further debates on Prestwick, but a compromise solution is likely. This will be the formation of a subsidiary company, under the terms of the White Paper plan, to take care of Scotland, embracing Scottish Aviation Ltd. and Allied Airways (Gander Dower), which operates airlines to the Orkneys. Neither of these companies seem to have

Commander Stassen Says:

International Aviation Depends On Cooperation Among Nations

C O M M A N D E R Harold E. Stassen, U.S.N., former governor of Minnesota and Republican delegate to the San Francisco Peace Conference, uses international aviation as an example of the need for cooperation between nations if world security is to be achieved in an article in the April 21 issue of *Colliers*.

Applying the present rule of absolute nationalistic sovereignty to the field of international commercial aviation, Stassen stated that if this country continues to follow the old principle, each nation has a perfect right to permit any of its citizens to fly planes anywhere in the world where they can get permission to land, to charge whatever they wish for freight and passengers, and to apply their individual rules—or lack of rules—to flight safety.

This, he contends, will result in the cutthroat type of competition that is economic warfare, and which inevitably tends to become military warfare.

"A constructive effort was made at the Chicago Civil Aviation Conference in November, 1944, to reduce these difficulties," Stassen wrote. "It was a good conference. It made progress on many technical matters, but it was totally unable to meet the most vital problems of the airways of tomorrow. Neither it nor the agencies it created can in any way affect the aviation practices of the nonmembers—and nonmembers are numerous and extensive. Nor can it do a thing about reasonable rates or fair economic practices of its members.

"Pause and contemplate what the situation as to airways and railroads would be in our own country if there were no agreement among the 48 states, if states could establish any airline or railroad between them they wished, could subsidize lines in conflict with one another, fix and change rates at will, and regulate or not regulate as they desired. We know

it would be chaos confounded. And chaos will be the word to describe world commercial aviation in a few years time if the principle of absolute nationalistic sovereignty is followed.

"On the other hand, if we follow the principle that man is sovereign, that we must have world-wide supervision over the development of air transport, there is no reason why we cannot develop international aviation that is as sound, safe and serviceable as our excellent domestic airlines.

"I would propose an International Civil Aeronautics Commission, whose members selected by the nations of the world, would supervise international airways in much the same manner as our own Civil Aeronautics Board supervises the airways within the country. This means that the commission would approve fair and reasonable rates; would issue licenses of public convenience and necessity to the airlines that are to fly the routes; would establish rules for safety of flight of traffic control, for aids to navigation, and would supervise the development of the vast network of airlines that should cross and recross every part of the world.

"Under such a commission, we would have wholesome competition within the boundaries of regulation, instead of economic warfare. Under such a commission, our airlines would obtain a fair share of the routes around the world and would obtain such portion of the business as their own efficiency and comfort and service earned from the public. It would prevent a ruinous race by nations to grant larger and larger subsidies to their airlines as each seeks to develop the air in unrestricted competition with the others. But the board's jurisdiction would be limited to flights between nations, and the board would not be given any power over the airlines within this country or within any other country."

any intention of being absorbed by the internal-European corporation but by forming a subsidiary to this, they would retain some of their own identity and own independence.

Meanwhile, flying staffs of the RAF Transport Command are being instructed how to handle passengers in a suitable manner. Traffic by Transport Command between Britain and the Continent has reached considerable proportions—68,000 passengers, 19,000 tons of freight and 2,000 tons of mail in the nine months ended 6th March last—so the authorities think crews should know some of the passenger relations secrets of the commercial airlines. Here are the "Do's and Don'ts" which have been issued to crews:

Do's

- (1) On receiving your manifest contact your passengers personally. Have a general chat with them on the flight. Tell them where they are going and how long it will take.
- (2) After taking off, see that the cabin heating is correct for the comfort of the passengers.
- (3) During the flight, if the condi-

tions are suitable, go back and talk to the passengers at least twice during the trip.

(4) If visibility is good, show them where you are on the map and point out towns and places of interest, including battle areas.

Don'ts

- (1) Don't frighten passengers by flying unnecessarily low, or doing steep turns.
- (2) Don't leave your passengers standing about near their aircraft not knowing what to do. Go and talk to them.
- (3) Don't "shoot a line."
- (4) Don't fly into bumps if it can be avoided.

Alaska Airlines 15 Years Old

Alaska Airlines recently celebrated 15 years of continuous service without a fatality on a scheduled run. The airline has paid less than \$10,000 in accident claims during the 15 years, despite the fact that the company flies over difficult terrain.



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PIPER CUB

Points the Way to Wings for All Americans

United Will Put \$2,071,000 Into LAMSA

Aims to Provide Mexico With 1st-Class Modern Airline Built on U.S. Standards

By W. W. P.

UNITED AIR LINES wasn't kidding when it purchased the Mexican airline known as Lineas Aereas Mineras, S. A., several years ago. Having changed the name to Lineas Aereas Mexicanas, S. A., familiarly called LAMSA, United is embarking upon a \$2,071,000 development program of airfields, buildings and radio facilities, exclusive of planes, to provide Mexico with a first-class modern airline on U. S. standards.

A few weeks ago, I had the pleasure of flying over most of the LAMSA routes on an inspection trip with some of United's officials. What I saw was impressive.

What United purchased wasn't much. There were a few old single-engined Vega planes which Gordon Barry, then owner of LAMSA, operated on most any sort of schedule between Juarez (across the border from El Paso) and Mexico City. The airfields were in rather bad shape. There was only a small organization. Traffic was small. The main assets consisted of a route concession and a mail contract.

In these times of equipment, manpower and material shortages, it hasn't been easy for United to move very rapidly with its development program. But there are several reconditioned twin-engined Boeing 247 transports now flying the line, the airfield and building program is under way, some of the radio stations have been installed, and another year should see LAMSA greatly improved.

Backbone of LAMSA is the trunk route between Juarez and Mexico City with stops at the fine modern city of Chihuahua, at the increasingly important agricultural and industrial city of Torreon, at the mining city of Parral, and at the colorful old city of San Luis Potosi. Total distance is 1000 miles. But this trunk route is bound to be superseded in importance by the Nogales-Mexico City route when LAMSA is successful in extending its route from Nogales into Los Angeles.

Serves Ranching Area

The Nogales route forks off at Chihuahua and has stops at Nuevo Casas Grandes, serving a vast ranching area, and Cananea, a big copper mine. From Chihuahua to Nogales is about 350 miles, and an extension to Los Angeles would mean about 400 additional miles. LAMSA now is using the airport at Nogales, Ariz., as the airfield on the Mexican side is not adequate for Boeing 247 operation. It may be necessary to use Cananea, Mexico, as a port of entry. The airfield there is good.

There there is a cross-country route, now operated by single-engined equipment, between Mazatlan on the Pacific Ocean and Nuevo Laredo on the United States-Mexican border opposite Laredo, Texas. This route is about 500 miles with stops at Durango, and Torreon and local stops at Custer Cienegas and Monclova.

In addition LAMSA operates a 70-mile route between Mazatlan and the San Luis silver mine at Tayoltita far up in

the mountains but this is more of a contract operation than an airline and the airfield lies adjacent to a river in a sharp and spectacular canyon.

All told, LAMSA has 3800 miles of routes, and an experimental permit for a route south from Mexico City to the Guatemalan border. This route never has been flown and the permit will expire late this spring unless United decides to exercise its rights. If it does, LAMSA would have a north-south route the entire length of the country in addition to one cross-country route.

'Best Flying Route'

The route between Mexico City and the two terminals at Juarez and Nogales is unquestionably the best flying route in Mexico. It is right down the middle of the country, protected by mountains on both sides, with good weather almost all the year round. The country itself is very arid and very rugged, but a cloudy day is a rarity. It is also the shortest route between Los Angeles and Mexico City, an important factor for through traffic.

Economically the Los Angeles gateway is essential, for although the domestic intermediate traffic is good, an important terminal is needed at the north end to balance the flow. If and when LAMSA reaches Los Angeles, it must do so as a foreign carrier, for LAMSA is a Mexican airline despite its ownership by United. It is quite inconceivable that LAMSA would not receive permission to connect at Los Angeles with U. S. carriers, for the route as a whole makes good sense for both Mexico and the U. S.

Unlike in the U. S., an airline in Mexico must build its own airports and buildings and other ground installations. This has retarded airline development in Mexico in the past and hard-surfaced runways are the exception rather than the rule. Airports cost money and so do their maintenance.

United is not hesitating to spend money on permanent improvements. Such expenditures are genuinely appreciated by the Mexican Government. For example at Juarez LAMSA is completing a \$212,500 airport, as fine a field in its class as one could find anywhere. It is spending \$34,000 for a passenger station and \$4000 for shops at Juarez. Ramp and gas facilities, power plant, radio station, furniture and other items run the entire Juarez expenditure to \$316,000.

But the biggest outlay is being made at Torreon where \$740,000 is being spent on an airport and shops. The airport itself is costing \$190,000 and the passenger

terminal \$90,000. Maintenance and overhaul shops are costing \$114,000. This is a lot of money, but Torreon is an important traffic-generating center and a logical site for overhaul shops. The tangible development means much to Torreon, and only a visit to the city is needed to show that this area is growing in industrial importance. It is also an important cotton center.

Here are the various improvements LAMSA is planning to make:

Airports	\$ 475,250
Passenger stations	187,200
Shops	168,200
Garage and Misc.	8,100
Furniture, etc.	9,300
Ramp and gas facilities	120,250
Traffic passenger service	41,600
Meteorology	4,200
Machinery and tools	40,000
Power lines	15,800
Stand-by power	47,700
Radio communications	136,300
Telephone	8,500
Radio ranges	663,400
Survey-engineering	124,100
Grand total	\$2,071,670

The table does not include expenditures for aircraft.

The entire program is to be completed within three years. Much of the construction already is under way and in charge is Armando Santacruz, formerly in the Department of Civil Aviation in Mexico, who has a good background in aviation and airport construction work.

The first modern radio range stations in Mexico were installed at its own expense by American Airlines at Monterrey, Victoria, Guerrero and Mexico City. Now LAMSA is installing a more extensive system on its routes and thus providing Mexico with important facilities which should add much to flying conditions there. Pan American and its affiliate, CMA use direction finding equipment. The American and LAMSA systems are identical to those in the United States.

So far LAMSA has installed 500-watt transmitters at Mexico, Nogales, Juarez and Torreon, and converted aircraft 70-watt auxiliary stations at San Luis Potosi, Chihuahua, Parral and Mazatlan.

Three 3000-Watt Stations

Under the expansion program 3000-watt stations will be installed at Mexico City, Torreon, Nogales, all equipped with radio teletypes, radio telephone and radio telegraph. At San Luis Potosi, Mazatlan, Nuevo Laredo, Chihuahua and Juarez 500-watt stations will be installed. At all other points 70-watt stations will be used.

Radio ranges will be located at San Luis Potosi, Durango, Torreon, Monclova, Chihuahua, and Nuevo Casas Grandes. The American Airlines range at Mexico City will be used as well as the CAA range at Laredo, Texas. Other U. S. Government ranges at El Paso, Douglas and Tucson can be used for direction finding.

LAMSA hopes to get its new radio equipment sometime this year.

Supervising the radio work is C. A. "Cap" Petry, superintendent of communications for United Air Lines. Petry, who knows as much as anyone else in the

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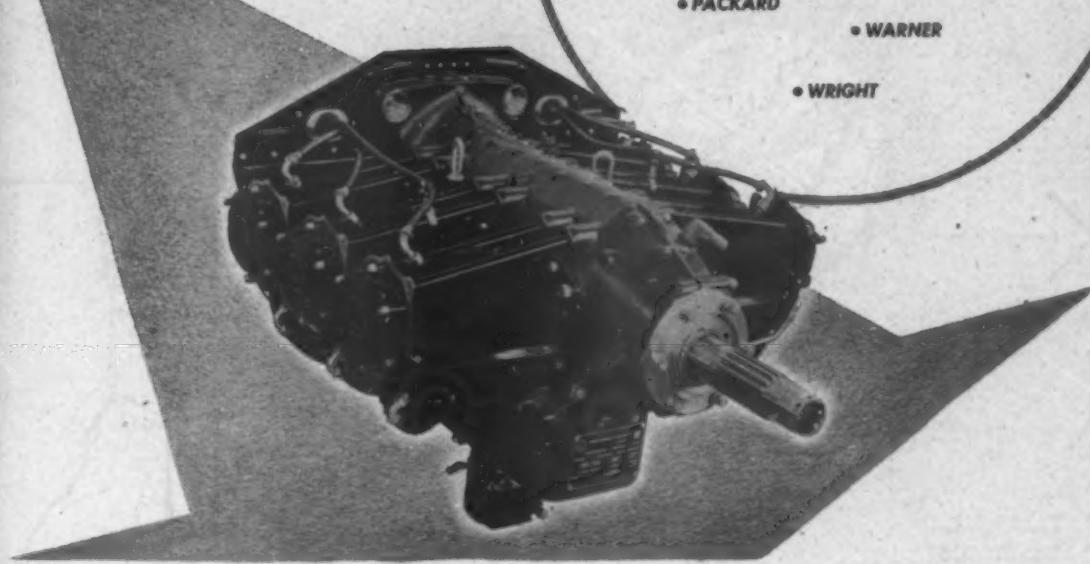
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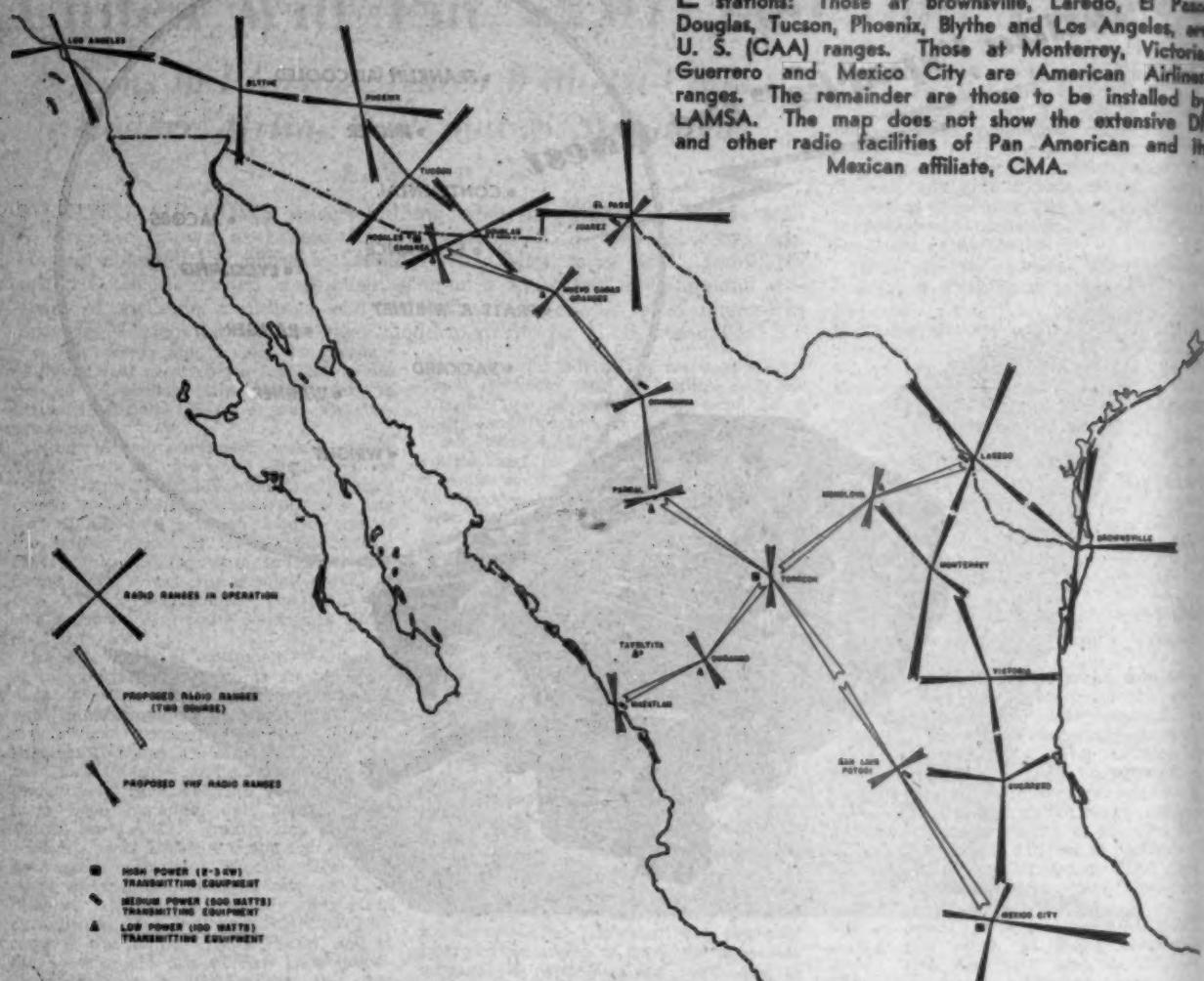
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BENDIX-SCINTILLA AND SCINTILLA ARE TRADE-MARKS OF BENDIX AVIATION CORPORATION

EXPLANATION of existing and proposed radio range stations: Those at Brownsville, Laredo, El Paso, Douglas, Tucson, Phoenix, Blythe and Los Angeles, are U. S. (CAA) ranges. Those at Monterrey, Victoria, Guerrero and Mexico City are American Airlines' ranges. The remainder are those to be installed by LAMSA. The map does not show the extensive DF and other radio facilities of Pan American and its Mexican affiliate, CMA.



Proposed Radio Facilities for LAMSA

country on radio communications, is currently dividing his time between the U. S. and Mexico.

Assisting Petry is Manuel Rubal who is on special assignment to LAMSA and who has the advantage of having been born in Veracruz, Mexico, and educated in the U. S. An able technician and a facile bi-linguist, 25-year-old Rubal only recently returned from the Pacific where he was flight radio operator on United's contract operation for the Air Transport Command. He joined United in 1936 as a C-W operator at Burbank. A naturalized U. S. citizen, Rubal first worked for Western Union in Los Angeles, studied nights and has advanced in United to a position of considerable responsibility. Knowing the Spanish language as well as any native son should, he is tailor-made for the job of directing radio communications for LAMSA.

United has loaned other of its trained and experienced personnel to LAMSA during this development period. William Taylor, LAMSA's president is handling policy and management matters.

Vice president of LAMSA in charge of

operations is Ted Johnson, long with United in numerous capacities, who has undertaken the job for the time being of organizing the operations department and keeping the planes in the air.

Superintendent of maintenance is W. A. "Buzz" Benson of United who also was in the Pacific operation during the tough early days of the contract service across the water.

Superintendent of overhaul is sage, experienced Joe Leonard, who bases at Torreon, and superintendent of stations is Kurt Springer, who also is an old-timer with United. Ken Rhead is now making the radio installations, and able Jack Gillespie, of United's flying organization who once flew for TACA in Central America, is in charge of pilot training.

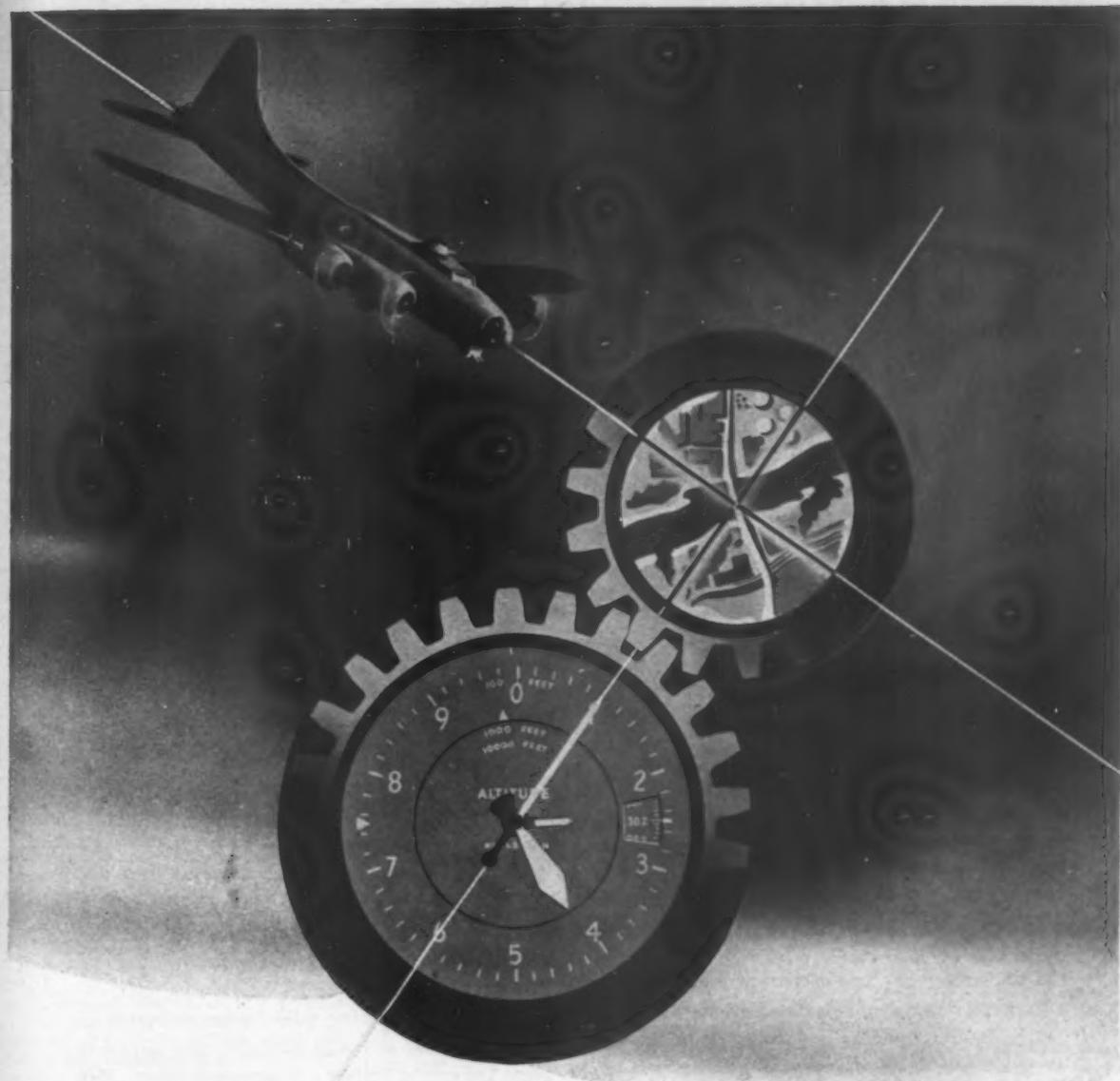
The plan of United's president, W. A. Patterson, is to develop LAMSA into a first-class airline and then turn the job of operating it over to Mexicans who are now being trained for various positions. Already a good group of pilots has been trained. Under Mexican law the vast majority of personnel must be Mexicans. When the job is completed it is unlikely

that United would have more than one or two U. S. citizens in Mexico.

Beyond that, however, is Patterson's desire to have Mexican financial participation but this probably will not come until the development program is near completion.

When conversions are completed, LAMSA will have five of the 10-passenger Boeing 247s in operation and these should be adequate until such time as it is possible to add DC-3s for the long haul. Mexicans want DC-3s, but the number of airports that can accommodate this type of plane is limited. In addition to the single-engined Vegas, LAMSA has a tri-motored Bach for the Tayoltita route. The Boeings have been tastefully decorated inside and out.

On the inspection tour on which I was invited, I saw a considerable portion of the northwestern part of Mexico. Tall, lanky Walt J. Addems, United's director of flight operations, was at the controls of the DC-3 Mainliner with W. D. "Bill" Williams, superintendent of flight operations, as co-pilot. Bill has flown for so many years that he's lost count, and say-



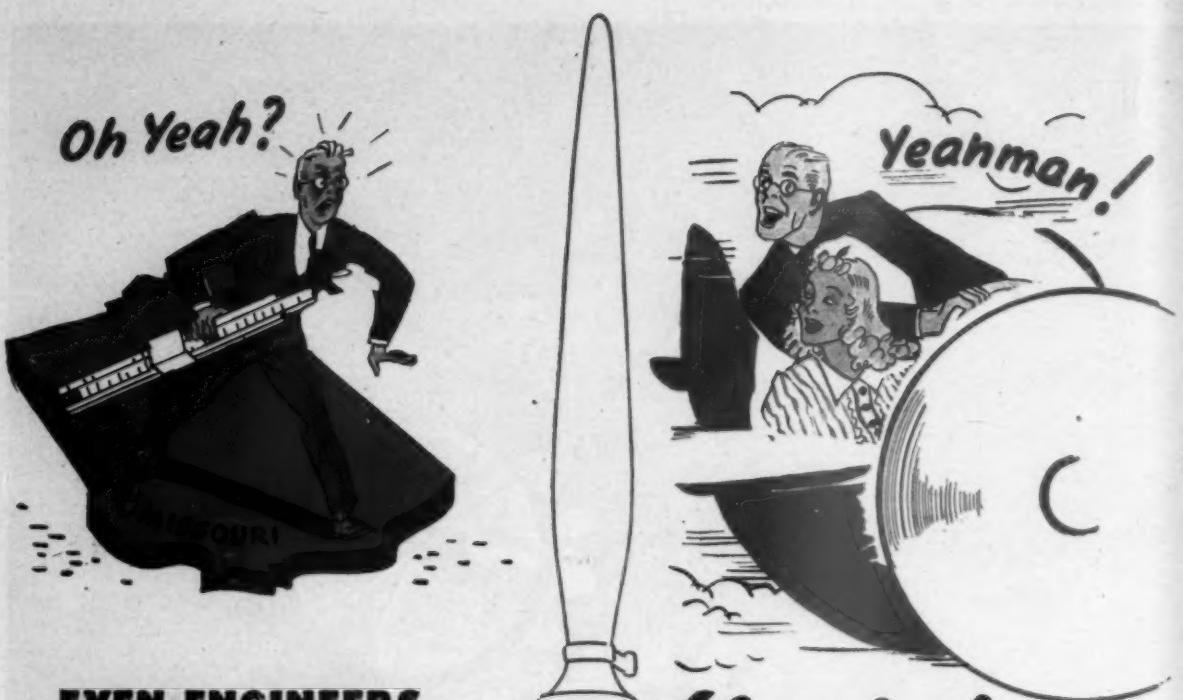
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ing that he was serving as "co-pilot" is a bit of whimsy. There's no better flying crew in the world than Addems and Williams and it was no small treat to sit in the jump seat and watch this million dollars' worth of talent perform. There are a lot of genuinely fine men in the aviation business and Addems and Williams are two at the top of the list.

Just to add to the array, Jack Gillespie, another top-notcher who has forgotten how long he's been flying, and who is training the Mexican crews for LAMSA, went along to take over occasionally. Jack knows Mexico and Central America from 'way back, and is getting a kick out of the assignment with LAMSA. Hardest working man on the ground at every stop was Ted Johnson, LAMSA's vice president, on loan from United, and one of these days we can tell you about a certain important and secret war mission he undertook with a few others earlier in the Pacific war.

Two United maintenance men, W. A. "Buzz" Benson, who ought to be in Hollywood because the name of Buzz suits him perfectly (and Van Johnson wouldn't stand a chance), and Roy Buesa, long-time United man who knows every screw and bolt in a plane and a plane engine without ever looking, kept the DC-3 in tip-top shape while moving about over a lot of isolated country between Mexico City and the U. S. border.

Magarrell a Visitor

Another visitor from the north was Don Magarrell, United's director of passenger service who was looking over the situation with the aim of aiding LAMSA. Not only is Don a gentleman from fine old Welsh background (bunking with him for a week in Mexico should be a sufficient test), but he's dished up the finest airline meals over a longer consistent period of time than anyone else in the business. The only time he was ruffled was when Ciro's room service at the Hotel Reforma in Mexico City wanted \$28.00 (American money) for a bottle of Scotch, but let no one draw any conclusions about the seriousness of the inspection trip because it was 95 percent work as anyone who travels about Mexico can discover to his own satisfaction.

Remainder of the inspection party consisted of likeable and able Armando Veracruz who is in charge of construction for LAMSA; Cap Petry, superintendent of communications for United, and Manuel Rubal, mentioned previously.

From Juarez to Mexico City, it's a high-flying trip. Like some of the western country in the U. S., the terrain is rugged and very dry. Flying at 13,000 feet doesn't seem very high because of the generally high altitude of the plateau. In the afternoons the trip is likely to be bumpy. But the weather is excellent almost all the year round.

West from Mexico City is the new Paricutin volcano and we were blessed with a fresh north wind which kept the smoke and grime to the south, permitting us to fly almost directly over the cone. It's a rare aerial sight.

Mazatlan on the Pacific coast has suffered from lack of tourists who used to come by boat before the war. But the fishing is good, we were told, and Mazatlan's port will always guarantee it as a reasonably good business and trading center.

Flying over the San Luis mine at

Scottish Aviation Director Sees Defeat of White Paper

Capt. McIntyre Predicts Creation Of British CAB

By W. L. RUSSELL

THE WHITE PAPER policy, proposing a British air transport set-up of three large monopolies, never will be enacted, and instead a British Civil Aeronautics Board, similar to that in the United States, will be created, in the opinion of Group Captain D. F. McIntyre, managing director of Scottish Aviation, Ltd., Prestwick.

Captain McIntyre, who flew to Washington recently enroute to the International Air Transport Conference at Havana, declared that the civil aeronautics board plan would "give airline operators their chance and safeguard the public's right to good air services." He declared that the interests in Britain favoring the White Paper policy "are playing suicide with the airlines to foster British-built aircraft."

Captain McIntyre contradicted the impression in some quarters in the U. S. that the White Paper policy has been approved and is certain of enactment. He pointed out that in a recent debate 13 out of 14 speakers in the House of Commons opposed it. The one advocate, he said, was a director of Southern Railways. Under the proposed policy railroads and steamship companies would participate in air transportation.

He predicted a great change in Government personnel when the end of the war occurs in Europe, bringing a sharp shift in attitude on the White Paper. He anticipates that the White Paper will become a major issue in a general election, which probably will be held this summer, perhaps as late as August.

Scottish Aviation, Ltd., founded Prestwick Airport and has done a large amount of aircraft conversion work for the British Government during the war. It proposes to operate internal, European and transatlantic routes. Fares will approximate 2½d a mile.

Captain McIntyre believes creation of a civil aeronautics board in Britain "would leave opportunity open for those who could prove themselves fit, willing and able to provide air transport services, and safeguard the public's right to cheap, safe and efficient air transport, and prevent unfair competition, monopolies or other mergers which might retard the develop-

Taylitz is a spectacle not soon forgotten. Surrounded by rugged mountains, the mine and the airfield are down in a deep canyon and engine failure would mean certain disaster. Both Addems and Williams, who have flown in much mountainous country, maintain they have never seen anything to equal this area.

One especially interesting spot on the LAMSA routes is Cananea, location of a big open-face copper mine. The airfield here is range country, but exceedingly smooth and hard. Chihuahua, likewise,

ment of air services or destroy genuine competition."

He attacked what he described as "the blatant intention of the White Paper to close the door forever on new enterprise and all opportunity in commercial air transport."

Group Captain McIntyre added that "the rather grudging admissions made by Lord Swinton and Sir Stafford Cripps are now sufficient, with all the proved and natural advantages of Prestwick's climatic and geographical situation, to allow Scotland to form a public corporation to own and develop its own transatlantic airport.

"I dare say we will arrive at our goal all the stronger for this reason, but it seems both unnecessary and unfair that we should have to suffer the delays caused by every conceivable form of opposition. Despite many requests to tie the transatlantic airport to Prestwick with a Scottish Airlines service to London, and proof that the Prestwick organization is more than capable of running this efficiently, the route has now been given to a railway combine which today has started to connect Prestwick to London with obsolescent aircraft carrying three passengers at great cost and taking as long as four and one-half hours."

"Wants No Subsidy"

In a statement of policies, Scottish Aviation declares that "it wants no subsidy; wants neither monopoly nor quasi-judicial 'protection' and hopes that it will have regulated competition from other British companies on every route." Rates equivalent to third class surface fares are anticipated by the company.

The company has negotiations under way to make a "drive yourself" car hire service available at every port of call for the convenience of passengers.

Scottish Aviation already has issued proposed schedules and fares for schedules to Canada and the United States; Glasgow to London, via Burtonwood; Grangemouth or Edinburgh to London, via Newcastle and Doncaster; London to Paris; Prestwick to Bristol, via Burtonwood; Dublin to Doncaster, via Burtonwood; Dublin to Aberdeen, via Prestwick and Grangemouth; Prestwick to Stockholm, via Aberdeen and Oslo; Prestwick to Amsterdam, via Carlisle and Doncaster; Prestwick to Hamburg, via Newcastle; services to the Far East, via Moscow and via the Mediterranean and India; and services to the Middle East, via Central Europe.

has an unsurfaced airfield but surfacing couldn't make for smoother landings, and rainfall is very small during the year.

The United men are enthusiastic about the LAMSA route possibilities. There's little doubt that about three years will be required before the company is in first-class condition. But meantime the Boeings are filled almost to capacity at all times. If traffic can be maintained during the development period, LAMSA should pull through excellently and the beneficiary will be Mexico.

Decision on McCarran Bill Not Expected Until Summer

**Senate Delays Regarded
As Favoring 17 Airlines'
Strategy Against Measure**

By GERARD B. DOSEN

A SENATE DECISION on the Chosen Instrument issue in international air transportation may be as far away as mid-summer, as a result of unforeseen delays in the schedule of hearings before the Senate Commerce Aviation subcommittee.

After representatives of the 17 airlines had completed their case in opposition to the McCarran All American Flag line bill April 11, Sen. Josiah W. Bailey (D., N.C.) chairman of the aviation subcommittee, stated that hearings probably could not be resumed before May 1, possibly later, because of inability of certain witnesses to appear before that date and because of other hearings scheduled by the Senate Commerce committee.

The delay is generally regarded as favoring the forces opposing the McCarran bill because it will give the Civil Aeronautics Board, operating under existing law, which requires "competition to the extent necessary," additional time to decide cases involving new international air routes. The assumption is that the farther along the CAB and State department are with route cases and international air agreements, the more difficult it will be for proponents of the single company to upset these policies and procedures.

Trippe to be Recalled

Juan T. Trippe, president of Pan American Airways, is to be recalled before the aviation subcommittee in May so that he may have the opportunity to explain the reasons why Pan Am's per revenue mile expenses in its Western division should be nearly three times as high as those of the domestic airlines. Much of the evidence which the domestic airlines placed in the record dealt with these cost differentials. They contended that competition explains largely the difference in these costs.

It was testimony by Ralph S. Damon, executive vice president and general manager of American Airlines, with reference to cost differentials that brought about some of the most spirited colloquies in the hearings to date. Damon testified that total operating expenses in Pan American's Western Division for the calendar year 1940 was 175.86 cents per revenue mile while the costs for the domestic airlines for the same year was 63.92 cents per revenue mile. The year 1940 was used because it was the last prewar year for which complete figures were available.

Both Damon and John E. Slater, executive vice president of American Export Airlines, testified that they felt that Pan American's Western division operations were fully comparable to domestic operations. They pointed out that similar equipment—Douglas DC-2's and 3's—

were used and that operations were largely over land—from Brownsville to Mexico City, the Canal Zone and Port of Spain—and that, therefore, costs were more or less comparable.

The disparity between Pan Am's operating costs with those of the domestic airlines (the table of these comparative costs appear in another portion of this article) brought forth many questions from Chairman Bailey. When both Damon and Slater said they could not explain these differentials and added that Pan American would be the best witness to give these details, Sen. Bailey decided that Trippe should be recalled.

Uses Lovett's Phrase

In one response to Bailey's question, Damon said: "It is the difference in philosophy of being fat and complacent as a monopoly versus being as, Mr. Lovett (Robert A. Lovett, assistant secretary for War-Air) said 'lean and hungry' as a competitor."

In another portion of his testimony, Damon compared operating costs of Pan American and American Airlines on their Mexico City operations. This comparison showed Pan Am's per revenue mile expenses as 175.8 cents and American's as 60.8 cents. Pan Am's figures were for 1940, American's for 1943, with the latter's corrected for the difference in airline operating costs for the two periods.

Damon also put into the record figures supporting his claim that there would be only a 5.90% differential in total operating expenses between U. S. Flag carriers and British operators. This testimony was given to refute statements of proponents of the single company who claimed that wage and cost differentials would be a serious handicap to American companies in their competition with foreign lines.

"My purpose in citing these records is to show that there is a general conception that payroll costs are more than half of the airline expense dollar and that this has not been true in the latest available peacetime information and that the highest of all figures I have cited is 44.8 cents," Damon said. He referred directly to testimony of W. A. Patterson, of United, who said: "about 60% of our expense in operating an airline is payroll;" and to Juan T. Trippe, of Pan American, who said: "it is fair to assume that 50 to 55% of total costs constitutes labor costs."

Damon said CAB reports showed that Pan American's Latin American service for the period under comparison showed payroll costs of 33.33 cents of the airline expense dollar while United's was 44.8 cents.

"Wage levels between countries do not differ so much for skilled categories as they do for the common or less skilled type," Damon said. He quoted State Department sources which revealed that a British skilled airline mechanic receives 95c an hour while the American mechanic receives \$1.10 an hour. He said the difference in pilot pay was comparable.

Damon said that it took British mechanics 500 hours to complete a major

Leadership—and How!

A member of a bomber crew, while on a mission over Germany, saw one of their fighter cover (a P-38) go into a fast dive. Reason: A German Me-109 was on his tail. After the German followed a P-51 Mustang. In the midst of the pursuit a voice came over the radio, "Look to Lockheed for Leadership." It came from the P-38 pilot! (Reprinted from *Modern Metals*.)

overhaul on a Twin-Row Wasp engine while the same engine could be overhauled by American mechanics in 225 to 350 hours. Translated into costs, this would mean the job could be done here for from \$247 to \$385 while in Britain it would cost \$475. Asked whether this indicated American labor was more efficient, Damon said he thought it was more a case of tooling and ingenuity.

"This is clearly not a case of the 32½% differential between British and American labor that was mentioned by a previous witness before this committee," Damon pointed out.

He then quoted from a report of a British mission which had been sent to this country in 1943 by the Minister of Works to study American production methods. This mission reported, Damon stated, that increased production here was not so much due to differences in the workmen involved as the more fundamental reason described as "the different tempo existing in the whole, and indeed expected of the whole industry, made possible by improved organization."

Damon said that U. S. airlines operating in foreign service would have to pay costs on the basis of 70% for operations under American wage standards in this country and 30% under wage conditions abroad. Foreign operators, he pointed out, would have to pay 30% of their costs on the basis of American standards.

Taking account of all of these variables, Damon said he would stake his reputation on the fact that the differential would not be more than 5.90% in total operating expenses in favor of foreign operators. He concluded that Americans with superior equipment, know-how and the will to go out and do a selling job would more than offset this slight advantage which foreign operators might enjoy in cost differentials.

Damon vs Brewster

Damon and Sen. Owen Brewster (R., Me.) engaged in spirited colloquy over American Airlines' position on competition. Brewster had read into the record some of the testimony given by Damon during the Boston-New York route case before CAB wherein American Airlines opposed granting certificates to competing carriers. He held that Damon's position was not consistent.

Damon explained that American felt that New England was a compact, geographical area which did not lend itself particularly well to point to point competition. However he added that American always presents the best case possible for itself before the court (CAB) and that in this case the court, believing more competition was warranted, had ruled against American.

C. Wayland Brooks (R., Ill.) sought to



IN the 1945 Red Cross drive, more than 12,000 Beechcrafters were offered a chance to contribute to the world-wide activities of the Red Cross. Every man and woman at Beechcraft gave to the Red Cross, setting a national record for large-scale unanimous Red Cross participation without known precedent or equal. Their response was

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This record is typical of Beechcrafters' response to the demands of total war. For more than three years, they have voluntarily put more than 20% of their pay into War Bonds. They have maintained one of the lowest absenteeism rates among all war industries. Most important, they have kept production on schedule every month since December, 1941.

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Congress

bring out in questioning of Damon that American, if it was successful in acquiring control of American Export Airlines and if it succeeded in getting the new routes for which it has applied, would approach, from the viewpoint of passenger miles operated, a volume of far-flung operations which Alexander B. Royce, of the Airlines Policy Committee, had described as being too large and too extensive for one company and one management. Brooks included in the totals some of the figures on American's ATC operations which Damon had testified included 450 crossings of the Atlantic in March of 1945, and a total of 4,164 for the year ended Mar. 31, 1945.

Damon said there were a lot of "ifs" in Brooks' assumptions—a lot of chickens that have not yet been hatched. "But those are the eggs that you are sitting on," Brooks responded.

Another leading witness for the domestic airlines' position was Jack Frye, president of TWA.

Frye sought to refute the claims of single company proponents that international competition between American companies would lead domestic airlines without foreign routes to enter "end-on" traffic agreements with foreign flag lines. Frye said he did not feel this was true because 70% of overseas traffic would be generated from eight large eastern cities, most of which are not served by the smaller domestic carriers. He felt that most airline tickets would be sold by independent agents and that a passenger would make choices based on the dependability and excellence of the service.

Discounts Big Plane Trend

Frye also discounted the trend toward 200-passenger type planes, asserting that such a plane, while in prospect of being built, probably would be unsuitable on world air routes and incapable of using most existing airports. He mentioned that Pan American Airways contemplated making stops at only Paris and Geneva in Europe, despite the fact it was serving a territory that has 92 cities over 100,000 population and six cities exceeding a million.

"Such superficial scheduling," he said, "will not properly serve American traffic to these points." He said the result would be to encourage more intensive services by foreign operators "with a loss of traffic by the American-owned operation." He felt that planes of $\frac{1}{2}$ to $\frac{1}{3}$ the size of the 200-passenger planes might be much more economical to operate. Frye said that if TWA were given the North Atlantic route and received 25% of the U. S. traffic, or 14% of the total traffic, it would require a fleet of 17 Constellations, operating four trips daily to Europe.

Slater confirmed testimony of Rear Admiral Emory S. Land, chairman of the U. S. Maritime Commission, by asserting this country's decline in maritime circles after the Civil War was due to following literally Horace Greeley's advice of "going west" at which time this country developed into an industrial nation, and turned its back on the seas. However he said that under the regulated competition provided in the Merchant Marine Act of 1936, this country was making real progress in recapturing its share of world shipping, and that American Export Steamship lines had "licked the pants" off the Italians in the Mediterranean in the pre-war days of Mussolini when



Native Dress, Modern Plane

Many of the foreign delegates to the United Nations Conference in San Francisco used air transportation to come to the United States. The Arabian delegation, after flying the Atlantic in an Air Transport Command plane with an American Airlines crew, is shown boarding an American airliner to go to New York. The members of the delegation, left to right, are: His Royal Highness Amir Feisal, His Royal Highness Amir Mohammed, His Excellency Sheikh Hafiz Wahba, and Minister to London, and His Excellency Shaikh Ibrahim Sulaiman.

Italian shipping was operating under a Government monopoly.

Alexander B. Royce, chairman of the Airlines Committee for U. S. Air Policy, told the Senate Aviation committee that the public interest, transcending all other considerations, can best be served by adherence to the nation's existing air policy in setting up a regulated system of competitive airlines in overseas commerce. Royce appeared as spokesman for the 17 airlines which are opposed to the single company policy.

Royce described the public interest as primarily concerned with maximum security and international preeminence in international air commerce.

"Our nation's rightful position of leadership in international air commerce can best be maintained by adherence to the traditional American system of private enterprise," Royce declared. "The competitive system, under the watchful regulation of the proper governmental authority, has resulted in a network of domestic air services which is the envy of every nation on the globe. A continuance of that system, which is already provided for in existing law, will assure us of similar sovereignty in the world's skyways. No cartel or monopolistic plan can bring it about."

Alternative methods under which international air commerce could be carried on were described by the witness as Government ownership and commercial operation by the armed services, both of which he held to be untenable.

Royce said Congress had done a masterly job in the passage of the Civil Aeronautics Act of 1938 and that this country, under the provisions of this law, had advanced to a position of world leadership in commercial aviation—both domestic and international. He pointed out that this Government, through the 1938 Act, does have a national air policy. He

refuted the testimony of some previous witnesses by saying the so-called historical policy of assigning domestic and international aviation to their distinct fields had ended with the passage of the 1938 Act, that since then the CAB had given certificates to several domestic carriers to operate into the international field.

The CAB Act, which called for regulated competition, started the industry on its way to prosperity and fulfilled, in a large measure, the dream of the bill's author—Sen. Pat McCarran (D., Nev.)—that a world-wide air transportation system of national value should be developed, Royce declared.

Royce Questions British Attitude

Commenting on the British White Paper, Royce said that Britain has been "urging, hinting and trying to see" that America adopts a single airline for foreign operations while she herself adopts a policy of multiple companies, operating in zones, and leaves the door open for additional new companies to come into the field some day. He said it was obvious that Britain hoped to draw this country into cartels and that such a circumstance could best be avoided if this country had several airlines operating in the international field.

Stating that this country should have respect but not fear of foreign competition Royce asserted that Britain's latest policy was definitely based on fear of competition with the United States. The United States is "so far ahead of other countries in air commerce that there isn't even a close second," he added.

Asked by Sen. Brewster whether this country could be complacent with regard to the threat of foreign competition, Royce said: "Definitely not. Competitors are never complacent."

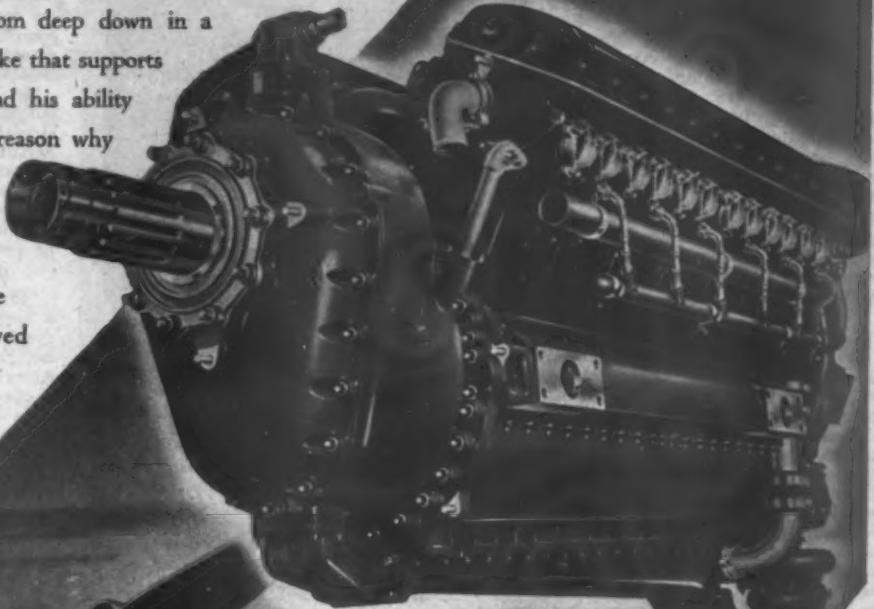
"I regard the White Paper as a de-

"WE GOT 'EM"

"We came at them out of the sun—peeled off, gave them the works and were upstairs again in a jiffy. Boy, that Allison's an engine!"

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fensive declaration. It represents action on the part of the British at this late date to catch up with us," Royce stated. Britain, under the White Paper policy, abandons the one chosen instrument because it is unsuited for the great expansion of the future. It has found that international operations will be too large and too far flung for the supervision of one individual and one company. If we adopt the single company idea, we'd be doing what they have recommended against doing themselves."

Royce said that none of the 17 airlines wants stock in the company which would be created under the provisions of the McCarran bill. This appeared to be a direct answer to Sen. McCarran who testified earlier during the hearing that all of the domestic airlines would want stock because of the prospects for a good financial return.

'All Ready to Go'

Sen. Warren G. Magnuson (D., Wash.) asked Royce how soon American operators would be able to fly the North Atlantic route if granted authority to do so. "Some of them would claim they could be ready tomorrow, others would say 'yesterday'. They are all ready to go," Royce said.

Royce predicted that foreign carriers would get 45% and American 55% of the North Atlantic route business. He introduced figures to show that American carriers in 1938 flew 565,000,000 miles domestically and internationally, twice as much as all European carriers combined.

Artemus L. Gates, assistant secretary of the Navy-Air; Robert Lovett, assistant secretary of War-Air and Maj. Gen. Harold L. George, chief of the Air Transport Command, were the last witnesses for the government in the fight against the McCarran bill.

Gates said that national security requires a powerful air force in time of war and the only way to make certain that this country will have air supremacy in time of national danger is to have the strongest possible international civil air transport system in time of peace. He said the stimulus of competition between American air carriers in the international field will produce a stronger international air transport system than would result from a single company operation. He added that competition between air carriers would help to keep alive a strong manufacturing industry and assure technical progress in the advancement of aircraft, engines and facilities.

All of these witnesses relied heavily on the successful operations of NATS and ATC to support their contentions that competition between domestic air line contractors as well as among the Armed services themselves had contributed immeasurably to make these operations the success they have turned out to be.

"Whenever we have put another contractor (domestic airline operator) in point to point competition, the utilization factor has gone up and the costs have come down," Secretary Lovett said in response to a question asked by Sen. Theodore G. Bilbo (D., Miss.).

Sen. Brewster sought to bring out that in effect, the military services were operating as a single airline company, and that the War Dept. did not recognize competition in the military establishment. But Lovett disagreed, asserting that there was competition between Army, Navy and the Air Corps and that it represented a



Honor for Riggers—Honoring the men and women who pack the parachutes that have saved many lives, the Pioneer Parachute Co. of Manchester, Conn., is presenting plaques to members of their profession. On each plaque is the name of the parachute technician and beneath are names of Caterpillar Club members who saved their lives in emergency jumps with parachutes packed by the rigger.

healthy condition which had contributed much to this country's eminence in the aviation field.

"It's the lean and hungry fellows in industry and commerce that produce the improvement in manufacturing and operating technique as well as the technological developments. There is no substitute for the competitive urge," Lovett declared.

Lovett said that the U. S. was "not as far advanced in the international air transport field as we should have been or could have been," in response to a statement by Sen. Brooks who pointed out that Pan American Airways, operating as a monopoly in the international field, had given this country its preeminent position in international aviation before the war.

Domestic Lines Made Tests

Asked the basis for this conclusion, Lovett said that Army pilots had exploded the mystery of flying over the oceans, that domestic airlines, under Army contracts, inaugurated night flying across the ocean and thereby brought down costs—a practice which was soon adopted by Pan American Airways. He further stated that it was a domestic contractor, under Army impetus, that proved that the North Atlantic route could be flown safely in winter and that after one domestic operator had proved the feasibility of these operations, another domestic operator was put on this same route and the service has improved continually under the stimulus of competition.

Sen. Brewster commented that this was all done under war necessity without regard to expenditure of lives or money and that economic reasons, such as the cost of navigational aids and landing facilities, had probably prevented Pan American Airways from initiating such services before the war.

Sen. Bailey pointed out that Pan Amer-

ican's success as a single company had been due primarily to "the threat of competition," a condition which always existed under the Civil Aeronautics Act of 1938 wherein the CAB was enjoined to inaugurate competition to the extent necessary for the development of a sound air commerce system. "Once you give a company an absolute monopoly, that threat of competition is eliminated," Bailey stated.

Gen. George said that he was completely out of agreement with any idea that eight aircraft would be sufficient for the North Atlantic route after the war. He termed this the "rankest kind of conservatism." He said he felt there would be a tremendous expansion in international air commerce, and that air commerce would be generated in millions of passengers.

Roundtrip to Europe: 3 Days

"We carried three million passengers—a large percentage of them overseas—and they're all ariminded," he said. The tourist potential, which would enable an American to make the round trip to Europe in three days and give him 11 days of a two weeks vacation to see Europe, all well within his budget, must be considered in the traffic potentials of tomorrow, Gen. George stated.

"I don't want to see this tremendous industry headed up by one man. I think it should be composed of six or eight of the best brains in the industry, operating as heads of separate companies if the future of American in the air is to be definitely assured," he added.

Asked by Sen. Brewster if he would reduce his enthusiasm to figures in terms of the number of planes that would be required for the North Atlantic routes, Gen. George said he could not do that, but commented that "Conservatism can be reduced to mathematics." Whereupon Sen. Bailey interjected "And a Liberal has no regard for figures."

Edward Warner, vice chairman of the Civil Aeronautics Board, told the Committee that he felt that the effect of foreign competition on a single U. S. American flag company would be more negative than positive in character. He said it was a common American expression that "we wouldn't like to run our operations the way foreign companies do."

He gave per mile cost figures for several foreign airlines, based on what he termed were somewhat inadequate studies and somewhat non-comparable operations, which tended to show that American airlines, even with the wage differentials, did operate more cheaply than the European companies. He said that difference in airplane production techniques would largely eliminate the building cost differentials which had existed between steamship construction in this country and abroad, an argument which proponents of the single company theory have frequently raised during this hearing.

William A. M. Burden, Assistant Secretary of Commerce-Air, said in support of regulated competition that this country was unique in the following respects: (1) We are the only major aeronautical power which has a strong tradition of competitive free enterprise in the transportation field and a strong aversion to Government ownership or any other Government control than is absolutely necessary; (2) We are the only democratic nation with a very large, highly developed domestic air transport industry. This is an asset which if properly used should be of great value

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In our international air transport; (3) There is every indication that as the world's greatest aeronautical power and one of its strongest financial powers we can secure a sufficient share of the international travel market to support more than one large, strong U. S. airline.

In addition to Trippe, witnesses still to be heard include representatives of the American Federation of Labor, the CIO, the Air Line Pilots Association, the American Legion, and the U. S. Chamber of Commerce. The A. F. of L. will decide what its policy is to be at a meeting of executives beginning May 14. It has stated that no one has been authorized to speak for the parent union on this question until it has acted on the recommendations of a committee of three vice presidents who have been studying the question.

Thus a Senate Commerce Committee vote is at least as far away as possibly May 20. If the bill should be reported out to the Senate, another two or three weeks or longer might well elapse before it could be reached on the Senate calendar.

Byrd Bill Asks Research Board Be Established For National Security

Sen. Harry F. Byrd (D., Va.) has introduced a bill in the Senate (S.825) which provides for the establishment of the Research Board for National Security.

The purpose of this legislation, generally endorsed by both military and civilian aviation groups, would be to give this research board direct responsibility for keeping military inventions abreast of the times in order to preserve this country's national security.

The Chairman of the National Advisory Committee for Aeronautics, chiefs of services of the War and Navy Departments whom the Secretary of War and the Secretary of the Navy may designate, and civilian representatives, including scientists, engineers and industrialists, approximately equal in number to the military personnel, would be named as members. The bill which follows generally the recommendations made before Postwar Policy committees of Congress by aviation authorities both in and outside of the government, was referred to the Naval Affairs Committee.

"I know of nothing more important in the years to come than for this Nation to perform the necessary research work so that we will know about, and be prepared to use, if necessary for our own protection, new inventions and new methods of warfare," Sen. Byrd told the Senate at the time he introduced the bill.

House Begins Hearings On Aviation Legislation

Hearings on aviation legislation in the House were to have gotten underway by May 1, it was revealed through Interstate and Commerce committee sources.

As this issue went to press, it was felt that 10 days to two weeks might be required for the committee to complete hearings on the Railroad Retirement bill and Freight Forwarder resolution. Aviation legislation was next on the committee's agenda.

The Lea bill, H. R. 674, which includes

Breakdown of Operating Expenses of Pan American Airways—Western Division and U. S. Domestic Airlines for Calendar Year 1940

	PAA Western Division cents per rev. mile	Percent of Total Oper. Expenses	All U. S. Domestic Airlines cents per rev. mile	Percent of Total Oper. Expense
Direct Operating Expense All Equipment				
Flight Personnel	11.11	6.33	9.38	14.48
Gasoline and Oil	10.87	6.18	8.03	12.58
Insurance	8.53	4.35	2.80	4.07
Maintenance	16.46	9.26	6.83	10.58
Depreciation	13.97	7.58	5.09	7.38
Joint Facilities—Fees and Charges	7.33	4.29
Miscellaneous	5.06	2.88	3.25	5.08
Total Direct	73.45	41.77	35.18	58.94
Ground and Indirect Operating Expenses				
Maintenance	9.00	5.30	3.31	5.18
Depreciation	7.04	4.00	0.87	1.30
Traffic and Sales	24.52	13.94	5.20	8.12
Advertising and Publicity	1.12	.04	2.92	4.37
Executive and General Less Taxes	14.28	8.11	3.54	5.54
General Taxes	12.60	7.17	1.31	2.08
All Other	33.19	18.87	11.39	18.13
Total Ground and Indirect	102.41	58.23	28.74	44.90
Total Operating Expenses	175.86	100.00	63.92	100.00

Note: Joint Facilities Charges as follows are included in the above PAA Ground and Indirect Operating Expenses:

Maintenance	1.27 cents per rev. mile
Depreciation	1.76 cents per rev. mile
Traffic and Sales	0.07 cents per rev. mile
All Other	2.05 cents per rev. mile
Total	5.11 cents per rev. mile

Source: PAA Figures from Post Office Department Form 2380. Domestic Figures from Annual Airline Statistics compiled by CAB.

2½ Billion Appropriation For Naval Aviation Passed

An appropriation for \$2,481,050,000 for naval aviation is included in the \$24,879,510,546 bill for the Navy Department, for the fiscal year beginning July 1, approved April 17 by the House Appropriations Committee.

The committee assailed a proposal to employ Pan American Airways to operate air transport service between San Francisco and Hawaii at a cost of \$15,100,000 with the Navy furnishing planes and equipment. It cut the item to \$5,000,000 "solely to allow sufficient time for the Navy to prepare to operate the service itself."

the National Airport plan, probably will get first call. In addition to the Federal-Aid airport construction program, this bill also would reconstitute the Civil Aeronautics Authority as an independent agency of government and would recreate as an independent agency the Office of the Director of Air Safety.

Attempts will be made, if not in committee, then on the House floor, to divorce the airport construction program from the rest of the bill. Rep. Clarence F. Lea (D., Cal.), chairman of the Interstate and Foreign Commerce Committee, is expected to resist these efforts.

The committee will first decide on an agenda to determine what other aviation bills shall receive attention. Appointment of a successor to Sen. Francis Myers (D., Pa.), who as a Pennsylvania member of the House was also a member of the Aviation subcommittee, probably will be announced at the opening meeting. J. Percy Priest (D., Tenn.) has been mentioned to fill the vacancy.

Expect Airport Bills To Come Up Before Senate Group Soon

The Senate Commerce committee's consideration of airport legislation had to give way the middle of April for hearings on the bill to establish the Missouri Valley Authority and it was possible that the full committee might not be able to return to the airport bills until this week.

A special subcommittee, headed by Sen. Pat McCarran (D., Nev.) had completed its revision of S. 2—the McCarran Federal-Aid airport bill—the revisions had been accepted by the Commerce Aviation subcommittee, but action by the full committee barely got underway when President Roosevelt's death and newly scheduled hearings prevented, for the time being, further consideration.

6 1/3 Million to CAA In Senate Appropriation

The Senate Appropriation Committee has approved a \$86,365,133 appropriation for the Commerce Department or \$6,999,133 more than that approved by the House. Of this addition \$6,357,133 will go to CAA.

Part of the additional fund, \$960,000 will go for construction of a Mid-Atlantic floating airdrome to serve as a weather reporting and iceberg patrol station. CAA officials emphasized that it was not intended as an airline stop since the big postwar transport planes will not need such facilities.

ICC Bureau Predicts Government Will Play Major Postwar Role

Report Says Federal Policy Will Determine Volume of Air Traffic

THE VOLUME of air traffic in the early postwar period will be greatly affected by Government policy, according to a report prepared by the Bureau of Transport and Economic Statistics of the Interstate Commerce Commission.

The report predicted that air passenger travel in the first postwar years is expected to be five times the 1940 volume, with the Class A travel market of the railroads the most likely to be hardest hit of any surface traffic.

It also predicted that the volume of early postwar air cargo seems likely to prove less than expected by many air transport exponents, with rates being the most important factor governing the growth of air cargo service.

With respect to the development of airmail, the survey made a cautious recommendation that air transportation will be used whenever the mail can thus be delivered more speedily. This would offset other estimates (the Curtiss-Wright survey, for example) that the volume of airmail would drop in the postwar period.

Two Uncertainties Listed

The survey said that two great uncertainties were present in the relation of government policy to the volume of all air traffic in the early postwar period: "Availability and use of surplus aircraft and the military demand. Neither can be gauged with accuracy."

The future of air transportation, especially in the early postwar period, will be affected to no small degree by the disposition made of the contract carrier, the right of surface carriers to enter air transport, and the policy adopted by the government as to subsidies. Decisions on these matters may be delayed for several years."

The survey leaned heavily on the Curtiss-Wright Corporation's survey in making its predictions on passenger traffic in the postwar years. In 1946, the survey said, passenger traffic is expected to be 45 times greater than in 1940, although falling to 80% of total air traffic, compared to 89% in 1940. "In 1948 passenger volume is estimated at 5.9 times 1940, and in 1950 at 6.7 times the prewar take-off year."

The survey held that "while it is not possible to predict the extent of traffic diversion from surface carriers to airlines because no one can foresee how much surface carriers will further cut costs and increase speeds and service comforts . . . it seems possible that up to one-third of the Pullman-type traffic may move by air by 1950, a doubling over pre-war penetration of combined air-Class A rail traffic. This estimate is apparently regarded as too conservative by some airline officials."

The ICC qualified its estimates by noting that none of its diversion estimates assumed any diversion of the low-rate

surface passenger traffic of railroads and buses to the airlines. ICC expects no such diversion until airline operating costs are brought down from the present level.

With respect to the prospects of air cargo in the early postwar years, the ICC took this position: "Inability of airlines to match low surface rates and the lack of airport facilities, particularly in the case of smaller communities, may prevent any great expansion of air cargo in the next few years, as air costs are likely to continue relatively high unless additional public aid is given."

The ICC held that rates undoubtedly will be the most important fact governing the growth of air cargo service, their importance in controlling traffic volume being indicated in the following table taken from the Curtiss-Wright survey:

Summary of Estimated Post-War Domestic Air Cargo Traffic at Various Ton-Mile Rates

Air cargo rates per ton mile [cents].	1946	1947	1950
80	6.3	8.5	10.9
70	9.5	12.8	16.6
60	16.0	21.5	27.8
50	24.3	32.7	42.2
40*	37.7*	50.7	65.6
35*	48.0	64.8*	83.6
30*	63.3	85.2	110.1*
20	145.5	185.8	233.1
16	296.0	400.8	515.2

* Indicates rates and volumes regarded as probable in the Curtiss-Wright study.

Support of the Curtiss-Wright position is indicated in the following summarization of expert opinion at a recent air cargo meeting (Chicago, February, '44):

The Prospects for Air Cargo

Actual for 1939	Expected five years after the war
\$0.32	\$0.35
2,925	200,000
2,706,000	150,000,000

* It was estimated by the experts at the meeting that at a rate of 35 cents per ton-mile, or about half of the rate in 1943, tons of traffic moved by air would be 75,000.

The ICC noted an interesting similarity between the estimates of the Chicago meeting and those of the Curtiss-Wright survey. "Assuming that both phases of the war will be over by the end of 1945, the estimates would apply to 1950. Curtiss-Wright believes that 110.1 million ton miles will be handled by air at an average rate of 30 cents a ton-mile, and 233.1 million at a 20-cent rate."

Ethiopia Signs Agreements

Ethiopia has signed the interim, transit and transport agreements as concluded at the International Civil Aviation Conference in Chicago. Including Ethiopia, 43 countries now have signed the interim agreements, 35 the transit agreement (two freedoms) and 23 countries the transport agreement (five freedoms). Five governments have accepted the interim agreement, five governments the transit agreement, and three governments the transport agreement.

Another Mauldin

A reporter for the "Ryan Aerolite" stopped in amazement the other day when he saw before him the spittin', shaven—or at least partly shaven—image of "Willie", the doughboy made famous by the Army's top ranking cartoonist, Sergeant Bill Mauldin. Investigation revealed that the resemblance was far from coincidental. The man in overalls busy doing some mechanical work was none other than Sidney Mauldin, father of the little sergeant who is so widely acclaimed as a battlefield artist. The elder Mauldin joined Ryan Aeronautical Co. without fanfare on February 23 and settled down to work in mechanical maintenance. But for his uncanny resemblance to "Willie" the fact that he is Bill Mauldin's father might not yet be known.

Conversion Becomes Big Task of Rebuilding

Forty Percent of Skin on One Army Transport Has to be Replaced by PCA

THE TRANSFORMATION of a C-49 or C-53 Army transport into a DC-3 commercial airliner might better be called a job of rebuilding than one of conversion. Such has been the experience of Pennsylvania-Central Airlines. From 15,000 to 18,500 manhours are involved, and conversion costs run as high as \$60,000 for a plane which cost from \$100,000 to \$120,000 new and is worth not more than \$100,000 after the conversion is completed.

As additional transports are declared surplus and allocated to the airlines, the problems of conversion are increasing rather than diminishing. This is due partly to the fact that the first planes turned back were those which had been taken over from the airlines in the beginning and at least conformed to airline standards in such matters as electrical systems and type of engines, while the more recent allocations have been transports which were originally built for the Army as troop carriers according to its specifications; partly to the difference in maintenance between planes operated by the Army and those operated by the airlines for the Army; and partly to the increased difficulties now being encountered in obtaining parts and materials needed for the conversion.

These problems are graphically demonstrated in PCA's experience. In 1944 the airline set what is believed to be a record for the reconversion of an Army transport, completing the job in 15 days. However, this plane was one that PCA, itself, had been operating for the Army, and had maintained in an airline airworthy condition; and all the parts needed to do the job were on hand.

One Had Been Belly-Landed

By way of contrast, one of the planes recently allocated to PCA had been belly landed in Alaska and allowed to sit in snow and water for a considerable length of time. Another exhibited signs of corrosion in the center section, and the entire section including the wing corrugations had to be steamed and cleaned with scrapers and wire brushes. This took four days. Fortunately there was no corrosion and all that was then needed was priming and repainting, but if there had been corrosion, the entire section would have had to be replaced. On another plane the fuselage frames above the level of the tops of the windows had to be replaced from a point just aft of the pilot's cockpit to a point almost at the tail. Because of this and other damage, 40 percent of the skin on this particular fuselage had to be replaced.

Patches, scratches and dents in the skin are another major problem. While many of these defects do not affect the plane structurally, they do not measure up to airline standards. The planes now being allocated have been used for many different purposes and are therefore equipped differently. All this equipment must be standardized for efficient airline operation. For example, the ADF on one ship was located further forward than it is on a commercial airliner. Since the calibration of this instrument depends upon the location, it had to be moved back. This in turn meant reskinning the spot

where it was formerly located. Likewise many other Army installations have to be removed and relocated, and their former positions reskinned.

The type of doors present a major problem. Generally the door frames are scarred and dented from cargo and have to be replaced, but some of the planes come equipped with large doors, and this requires a major structural alteration and the installation of additional frames to change them over to the standard size doors. On one plane allocated to PCA the door was located on the right side. This had to be blocked off and skinned and a new door installed on the left.



The aft cabin bulkhead on one Army transport looked like this when the plane was turned over to PCA for transformation to an airliner. Note the scars.



Metal work is the most critical part of the reconversion. Here PCA metalsmiths are replacing scarred and damaged skin on the fuselage. On some planes even parts of the structure have to be replaced.

Pratt & Whitney engines and 24-volt electrical systems are two other problems. PCA standardized on Wright engines, and if it receives a plane equipped with P & Ws, it has to pull them, rework the firewall and nacelle, and put in Wrights. Likewise, a 12-volt electrical system is standard for airline DC-3s. Since all equipment is designed for this system, retaining a 24-volt system such as is standard for many Army ships, would mean purchasing all new equipment and spares, an expensive proposition at best, and more likely an impossible one since the equipment just isn't available. Instead, therefore, the entire 24-volt system must be removed, and the airplane rewired for 12 volts, which includes the making up of conduits, not used with the 24-volt system. And even if the plane is equipped with a 12-volt system, it may have to be rewired anyway due to defects or corrosion in the wiring as PCA has had to do recently with two planes.

On some planes the lavatory installation has been removed and has to be built

up from scratch. On others a rear bulkhead and buffet has to be put in, and likely the forward bulkhead pulled, repaired and re-installed. Wherever there is evidence that the plane has been damaged and internal repairs made, it is generally necessary to pull the skin of wings and control surfaces to see that these repairs measure up to airline and CAA standards.

Even where the plane has not been actually damaged, it may be necessary to spend many hours just cleaning it. One plane recently allocated to PCA had sand and dirt more than one-half inch deep inside the belly of the fuselage. To clean it out and prime the surface took nearly a week.

What makes the job even more difficult is the scarcity of materials with which to make repairs and replacements. Aluminum alloy sheet for reskinning has been very scarce and has caused several delays in the reconversion program. Flooring is impossible to get, and PCA has had to build up floors out of plywood which is



Dark patches on the skin of this DC-3 fuselage in the PCA overhaul hanger represent the places where the skin had to be replaced during the process of reconversion from an Army transport. On this particular airplane more than 40 percent of the fuselage had to be reskinned.



This is how the same interior looked when the plane was turned over to PCA. Note the litter supports on the window frames and the long troop benches.

not standard. Now even this is difficult to get.

Another major problem arises from the lack of historical records with the plane. This is particularly true in the case of engines and propellers. Many parts of the latter have to be replaced because the records are missing. Likewise the CAA requires that engines and props be taken down and overhauled regardless of when they were last overhauled by the Army. Further, some of the props are equipped with paddle blades which aren't suitable for airline operation.

After the plane has been repaired and rebuilt, there still remains the major problem of equipping it for airline use. The Army radio installation has to be pulled and replaced with a standard airline installation. Likewise the instrument panel must be removed and replaced with a standard airline panel. PCA also removes the wheels and brakes and replaces them with its own standard installation. Next sound-proofing, interior finishing,



This is how the interior looks after reconversion. Seats, hat racks, soundproofing and upholstery have been installed. It's just the same as a factory model.

seats and other items of airline equipment must be installed. PCA obtains certain interior conversion materials from the Douglas Company. These include seats of the new Douglas lightweight design, seat fittings, air ducts, and certain hardware. But there are many other items that are not obtainable from Douglas or any other source. These PCA has to fabricate itself and include such things as buffets, fuel dump chutes, parachute flare containers and firewall pulley brackets, together with many other things which they don't realize they won't be able to buy at the start of the job. In one case, for example, it was necessary to machine parts for handrails. Normally these would have been castings.

One may wonder how an airline gets into such a situation. The answer is

primarily scarcity. PCA, like every other airline, has to take what it can get. When it receives notice of allocations of surplus planes, it sends an inspector to Bush Field near Augusta, Ga., to look the planes over. He makes a general inspection of all planes as to the type of electrical system, make of engines, size of cargo doors, and general condition, and advises the company of the order of his choice.

About a week later an assignment meeting is held at the DPC. As each number comes up, PCA and any other airlines entitled to a plane under that allocation, signify whether they want that plane. If more than one wants it, the names are put in a hat, and the one drawn out is the one getting it. In this

(Turn to page 42)

FDR Was 1st Flying President, Great Booster for Aviation

THE AVIATION industry joined the world last fortnight in mourning the death of President Roosevelt, first chief executive to fly while in office.

FDR used the airplane for trips both at home and abroad. It was under his administration that the Civil Aeronautics Act of 1938 was adopted, and under his leadership progress was launched toward international air agreements.

By his use of air travel to Casablanca, Teheran, and Yalta, President Roosevelt demonstrated the value of international air transport. He traveled approximately 25,000 miles in air trips to major international conferences.

The late President electrified the nation by flying with American Airlines from Albany, N. Y., to Chicago in 1932 to accept the nomination. He set a precedent which was followed by Thomas Dewey last summer.

The airplane made it possible for two of his sons abroad—one in England, the other in the Pacific—to come home at the time of his death. Douglas DC-4, Model D, equipped with an elevator, was built especially for the President.

Transcontinental & Western Air flew Mr. Roosevelt a total of 18,474 miles for a total of 91½ hours in connection with the Casablanca, Teheran and Yalta conferences. The flights were: Casablanca—4,410 miles, 23 hours and 5 minutes; Teheran—8,764 miles, 52½ hours; and Yalta—2,300 miles, 16 hours. On the first two flights, the pilot was Lt. Col. Otis Bryan, TWA vice-president.

Pan American Airways flew the President 7,553 miles at the time of the Casablanca Conference, taking him from Miami to Trinidad to Belem to Bathurst (Africa). TWA flew him from Bathurst to Casablanca. On the return trip, PAA flew the President from Bathurst to Natal,

then TWA took him to Trinidad and PAA connected for the Trinidad to Miami lap.

Highlights of President Roosevelt's role in aviation history include:

1933—July 3—First President to fly while in office. Flew to Democratic Convention in Chicago from Albany, N. Y.

1933—Feb. 3—Reported considering placing Air Transport under Federal Control. June 17—Approved allotment of funds for construction of Navy planes.

1934—Feb. 8—Requested inter-departmental committee to study all phases of aviation.

June 13—Signed bill providing for appointment of committee to formulate air policy.

June 21—Signed air crash publicity law. Sept. 22—Approved the Baker Board's report on Army aviation authorizing increase in planes.

1935—Feb. 1—Submitted report of Federal Aviation Committee to Congress; rejected proposal for establishment of Air Commerce Committee.

June 8—Urged control of commercial air

High Riding Jeep

During Army tests of the Boeing C-97, Bill McKee, flight test liaison engineer, drove a jeep around inside the huge transport while several thousand feet above the ground. The jeep was loaded with a couple of tons of lead shot, and was driven back and forth inside the ship to change the 97's center of gravity at propitious moments during the tests. As far as is known this is the first time a jeep ever flew and, at the same time, moved along under its own power.

service by the Interstate Commerce Commission.

Aug. 13—Signed Wilcox Air Base bill. Aug. 15—Signed McKellar-Mead Air Mail bill.

1936—June 3—Vetoed bill for Naval Air Station at Miami.

June 9—Vetoed bill for Air Reserve Corps. June 26—Approved bill authorizing 2,200 Army planes; also bill for Alameda, California Naval Station.

1937—Feb. 10—Conferred with a group of pilots on safety measures.

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President Truman Knows Industry Problems; Often Travels by Air

PRESIDENT HARRY S. TRUMAN has had Congressional experience in aviation development, both in matters of air transport and aircraft manufacture. For personal transportation, too, he has used plane travel.

As chairman of the aviation subcommittee of the Interstate Commerce Committee of the Senate, he conducted hearings which helped form the basis of the Civil Aeronautics Act of 1938. As chairman of the Committee to Investigate the

National Defense Program, he became acquainted with many of the problems which aircraft manufacturers have had to solve under accelerated wartime production.

President Truman is a firm believer in the policy that transportation services should be independent. In a speech to the Traffic Club of Baltimore Feb. 1, 1944, he said:

"The reason that I differ with the proposed 'integration' of transportation systems is that I believe that that proposal is fundamentally based upon the concept that a permanent level or pattern of transportation has been achieved, and it is now simply a question of organizing its structure and distributing its fruits. To me the proposal implies the adoption of the cartel theory, which in essence expounds the view that because anyone who at one time, either themselves or more often their predecessors, made significant contributions in the advancement of civilization is, by reason of fact, entitled to an existence in perpetuity at the expense of society in general without making any further contributions."

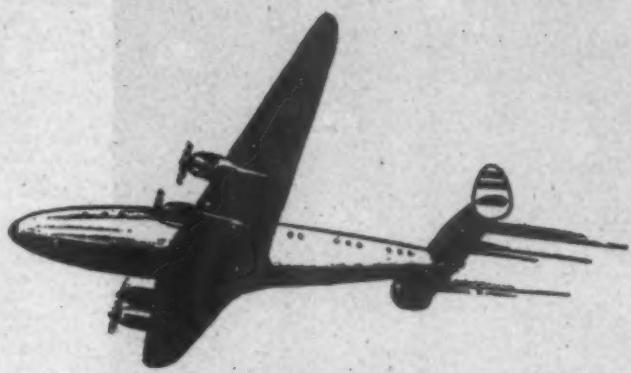
"Our policy must be to encourage initiative, not to exclude it. The Government's function should be, not to direct and operate transportation systems either itself or through cartels, but rather to police and curb manifestations of self-interest which are harmful to growth and progress."

Truman will not be able to witness personally the outcome of a dispute in the Senate which he precipitated when upon becoming vice-president he began referring aviation bills to the Interstate Commerce Committee of which he was a former member. The Bailey resolution, now on the Senate calendar, asks that S. 541, a bill to reorganize the Civil Aero-



Became 1st Flying President—Roosevelt set a precedent in 1932 when he flew from Albany to Chicago to accept the Democratic nomination for President. The trip was made on American Airlines in a tri-motor Ford transport. This photograph, taken in 1932, shows him with members of his family at the door of the plane. From that time on, Roosevelt covered thousands of miles by air to important conferences.

Air Service from Prestwick



Air service by Scottish Aviation means more than direct connection with the rest of the Northern hemisphere. It means the greatest possible variety of service at the lowest possible price, for the Prestwick plan provides for intensive commercial development of aviation. It means overseas air transport that supports itself by enlarging overseas travel and trade instead of relying on Government subsidy.

In brief, Scottish Aviation are planning for the day when air traffic will move in volume at the equivalent of third class surface fares. The Prestwick organisation, devoting all of its energies to the war job, is helping to make Britain an airfaring nation.

SCOTTISH AVIATION

Scottish Aviation, Ltd., founders and owners of Prestwick Airport, are concerned solely with the development of aviation in its various branches.

Head Office, Prestwick Airport, Ayrshire,



Helicopters Interest Truman—A follower of progress of rotary wing aircraft, President Harry S. Truman, while still vice president last month, visited Bell Aircraft's Niagara Falls plant and witnessed a demonstration of the Bell helicopter. With Truman is Lawrence D. Bell, president of Bell Aircraft. Truman predicted that the manufacture of helicopters will play a vital role in helping solve peacetime employment problems.

nautics Authority, be taken from the Interstate Commerce Committee and referred to the Commerce Committee. The resolution was debated for two hours and considerable feeling has developed over this jurisdictional fight.

Last month, Truman, then vice-president, witnessed a demonstration of a Bell helicopter at Bell Aircraft Corporation's Niagara Falls assembly plant. Interested in helicopter development many years, Truman on the unofficial visit at the invitation of the company's president, Lawrence D. Bell, predicted that helicopters will play a major role in helping

solve employment problems in peacetime. In addition to the flight demonstration of the helicopter, Truman also witnessed test flights of the jet propelled P-59 Airacomet, the P-63 Kingcobra, and an exhibition of the firing of frangible bullets at the RP-63, the armored plane the War Department recently announced was being produced by Bell. Ray P. Whitman, manager of Bell's Niagara Frontier Division, explained the operation of the frangible bullets and the armored plane to Truman, whose interest in such matters dates back to his record as an artillery officer.

U. S. Has Sent Russia 13,000 Lend-Lease Planes

The United States has sent to the Soviet Union, under lend-lease, 13,000 planes, the largest total to any ally, the Foreign Economic Administration reveals. Thousands of the aircraft were flight delivered by American and Russian pilots, from points in the Western Hemisphere to Russian airfields or to delivery points in the Middle East from which they were flown into Russia.

War service supplied to Russia, such as ferrying of planes and transportation is valued at \$515,000,000. Total transfers of munitions and supplies to Russia through February equalled \$8,225,000,000 or 31.7% of all lend-lease.

Mars Sets Record of 20 Ocean Flights in Month

The Mars, world's largest flying boat, in Pacific use by the Naval Air Transport Service, has carried total cargo equal to 64 loaded freight cars a distance equal to 10 times around the earth at the equator. Since January, 1944, when it began regular service for NATS, it has flown a total of 124 trips, or 62 round trips, between Alameda and Pearl Harbor. It has carried 2,564,752 pounds of cargo and 2152 passengers and piled up a total of 270,000 miles.

Flying 20 scheduled trips and two test hops in March, the Mars broke all its previous records for monthly operations.

FDR in Aviation

(Continued from page 40)

- Apr. 4—Ordered land set aside at Fairbanks, Alaska, as a possible Army base.
- Sept. 3—Vetoed Washington, D. C. airport enlargement bill.
- Dec. 5—Declined to comment on plan for Interstate Commerce Commission control of transport lines.
- 1933—Jan. 5—in conference with Senator McCarran, backed plan for separate commission to control commercial air service.
- Jan. 16—Signed bill extending air-mail routes.
- June 8—Appointed Civil Aeronautics Administration members.
- Aug. 18—Appointed National Advisory Committee for Aeronautics members.
- Nov. 18—Approved PWA funds for new Washington, D. C. airport.
- 1939—Mar. 5—Asked Congress for Autogiro Research.
- May 21—Hailed opening of Trans-Atlantic air mail service in telegram to Pan American Airways.
- Oct. 8—Asked National Sciences Academy for opinion on best blind landing method.
- 1940—Jan. 18—Authorized La Guardia Field plane hangar to be built by WPA.
- Sept. 29—Dedicated Washington, D. C. airport.
- 1941—Apr. 20—Approved WPA expenditure for LaGuardia Field runway facilities improvement.
- Sept. 13—Approved Pan American Airways Miami-Africa service permit.
- 1942—May 23—Created board to adjust disputes between airlines and employees before strike vote stage is reached.
- 1943—Mar. 11—Recommended program of expanded and integrated airways for passenger and freight service.
- May 16—Lauded aid of airlines in war effort.
- Oct. 2—Revealed after conference with Churchill that he favored free transit, private ownership except in unprofitable areas; viewed base sovereignty as unimportant.
- 1944—Mar. 21—Endorsed pre-flight training for youths of 15 years and over.
- Oct. 28—Signed order permitting ATC and NATS to carry priority in hauling civilian passengers and cargo as stop gap until airlines could resume regular commercial flights overseas.
- Nov. 1—Asked International Aviation Conference to bar air blocs which would lead to war; urged agreement on routes for U. S. after either Germany or Japan's defeat.

Converting a Warliner

(Continued from page 39)

way the allocation is kept impartial, but at the same time the airline has to take what it gets.

After receiving the number and assignment cleared through the CAB, PCA again sends an inspector together with a pilot to Bush Field. This time the inspection is even more thorough and the inspector makes sure that the ship is all right to fly back. As soon as it is taken to Washington, the records are assembled and gone over by the inspection section.

Then the camouflage paint is stripped off, and the plane is dismantled for a thorough inspection of all assemblies and systems. Everything that must be done to make the ship airworthy is written up, and the work proceeds as described.

Due to the conversion program, the PCA overhaul hangar today looks like the experimental department of an aircraft manufacturing plant.



"COMING EVENTS CAST THEIR SHADOWS . . ."

Over busy cities . . . industrial scenes . . . rolling farm country . . . wild, wooded regions, the shadows of rotary wings will be familiar sights . . . as helicopters take their place in future air transportation. Today, details of helicopter advances in design and in performance are not available to the public . . . but the progress made during the war, under Government sponsorship, promises a practical, useful type of aircraft with special flying abilities, freeing it from airport limitations. Kellett's experienced engineers and

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KELLETT

OLDEST ROTARY WING AIRCRAFT MANUFACTURING COMPANY

14 Legislatures Approve Bills Establishing Aviation Agencies

Sixteen Other States Have Measures Pending; RR Influence is Weak

FOURTEEN state legislatures, as of April 17, had approved bills establishing aviation agencies while 16 other states were still faced with making decisions on pending aviation agency bills. Railroad dominated legislation was still not making any appreciable progress.

State aeronautical agencies are now in existence in the following states: Indiana, Iowa, Maine, Maryland, Minnesota, Montana, New York, North Carolina, North Dakota, South Dakota, Tennessee, Washington, West Virginia and Wyoming. Of this group, Indiana, Montana and New York have their first aviation agencies while Iowa, North Carolina, North Dakota and Washington adopted new aviation agencies to take over the aeronautical work which has previously been done by some other department.

Aviation agency legislation is still pending in California, Connecticut, Delaware, Georgia, Massachusetts, Michigan, Missouri, Nebraska, New Hampshire, Oklahoma, Ohio, Pennsylvania, Rhode Island, Texas, Vermont, and Wisconsin. By May 1, it was expected that many of these state assemblies would have completed action on pending bills.

New bills have been introduced in two states. A comprehensive bill, S. 209, on aviation was dropped in the hopper of the Ohio legislature recently. Three new bills—A-539, S. 458 and S. 401 have been introduced in Wisconsin. A Senate committee reported unfavorably on S. 458—a

bill which would have changed existing statutes and appropriated funds for aviation development. S. 401 seeks to change existing aeronautical laws, provides for licensing of aircraft, pilots, airports and airport managers. A hearing was held on this bill April 11.

The Alabama legislature was scheduled to convene May 1 and it is understood that a model air carrier regulatory bill, sponsored by the National Association of Railroad and Utility Commissioners will be introduced.

Proposals in New Jersey to make operators of aircraft for hire public utilities and place them under the jurisdiction of the public utilities commission of that state, came close to passage in the house of origin but finally were recommitted and went un-enacted at the time the legislature adjourned April 10.

A similar fate befell the NARUC bill in New Mexico. In Vermont, the Model Air Commerce Act (NARUC) passed both branches of the legislature but was amended, however, to exclude from its scope interstate aircraft carriers.

Thus it appeared on the basis of information which was available when this issue went to press that the Railroad and Utility group had met with almost universal defeat in its program to pass railroad dominated economic regulatory legislation. The group scored a partial success in Arkansas where a regulatory bill was passed but only after it was amended to exclude interstate carriers. Where these bills had not been killed outright, it appeared they had died in committee although the complete picture will not be known until all of the legislatures have adjourned.

California Aerial Mapping Project Recommended

A project for complete aerial mapping of California during the next 10 years as a cooperative arrangement between State and Federal agencies on a 50-50 basis is recommended in a new report by the State Aerial Mapping Project Committee of the Reconstruction and Reemployment Commission. Pointing out that two-thirds of the state is unmapped or inadequately mapped, the report states that aerial mapping is essential since it is the only way to obtain accurate topographical maps and since it greatly shortens the time necessary to complete the maps.

Funds for the proposed project would be used predominately in employment providing a permanent job for returning veterans with engineering training. "In addition to being useful to all citizens of the State, adequate topographical maps would invite outside capital to make investments in California," the report states. "These maps are essential to development of California's natural resources."

The proposal calls for the State putting up \$3,000,000 to be matched with Federal funds. A 10-year program would be arranged, with U. S. Geological Survey doing the mapping and a permanent advisory committee, composed of members of map-using agencies advising on the yearly programs.

authorizes new services would arise from the competitive duplication of interstate services by intrastate operations.

"Reduced pay loads for the interstate airlines and competitive rate adjustments might subject the air transportation industry to economic disturbances which would impair its credit, increase the cost of capital, and curtail that growth and development which would otherwise be experienced.

"Also by directing interstate carriers to provide better or different services, by reducing their rates, and by other regulatory requirements, the states may seek to prefer local services to interstate services, thus pushing development which would render the carriers less capable of supplying the more essential long-distance services."

Ryan pointed out that "significant financial burdens" could be expected to result merely from compliance with multiple regulation.

"Many of the airlines operate across a dozen states or more; five are transcontinental in their operations; four traverse the length of the country north to south. The compliance burdens resulting from state regulation become serious then because the carriers are subject to so many separate jurisdictions and because the earnings of the industry will not support such a burden."

Ryan also declared that "there exists among members of the air industry a not unnatural fear that the regulation of air commerce by the state public service commissions and the railroad commissions may lead to the adoption of state programs which will be contrary to the policy being pursued by the federal government."

Regulation of Air Commerce Must be Federal, Says Ryan

THE CASE for economic regulation of air transport "is more impressive on the political than on the economic plane," according to an article by CAB Member Oswald Ryan in the March issue of the *Virginia Law Review*.

Ryan held that air transportation is essentially interstate and international in scope and that local services will be of importance "chiefly as they are integrated with the interstate services."

"Federal regulation will of necessity have to assume major responsibility for the development and control of local services," he wrote.

"However anxious the federal government might be to avoid regulatory responsibility and however eager the states may be to preserve their jurisdiction, the economic determinants of the industry press irresistibly in the opposite direction.

"The regulation of air commerce not isolated from the national network, if it is to promote the national interest, must be federal. No state body can be given jurisdiction coextensive with the operations which it must govern; state regula-

tion in all likelihood would become a crazy quilt of clashing colors and inconsistent patterns."

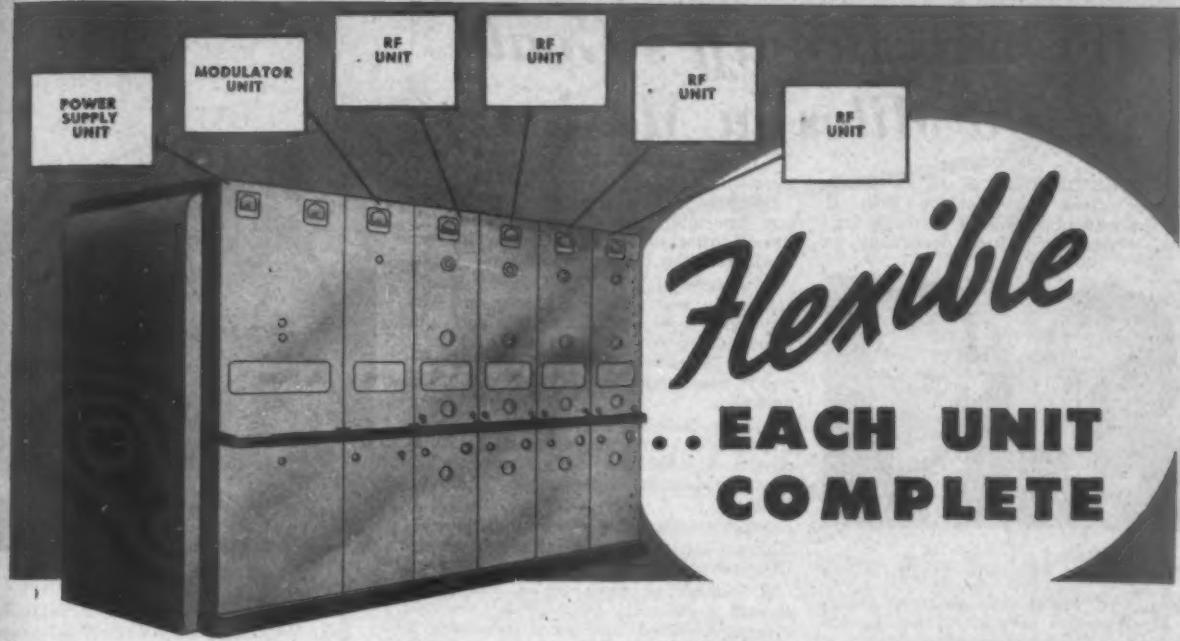
Ryan held that no economic need or essential public interest "requires the assertion of state control over carriers engaged in interstate commerce."

He said there were two reasons why state regulation "threatens to lay a serious burden upon the development of air transportation:

"State regulation is likely to result in numerous conflicting and inconsistent orders by the several state commissions and by the federal and state authorities; the very multiplicity of regulation to which air transportation will be subjected in itself will constitute a serious economic burden which may jeopardize the development of the industry."

Ryan held that the burdens resulting from multiple regulation by the states and the federal government would be of two types:

"One of the serious burdens that could result from independent state action to



NEW SERIES CT-3000

MULTIPLE UNIT GROUND STATION TRANSMITTER

Flexibility is an outstanding feature of the CT-3000 series transmitter. Its design provides for the expanding requirements of a station and offers operational advantages. A station may consist initially only of a power supply, a modulator and one RF unit, being later enlarged by addition of RF units as needed. In operation, simultaneous transmission over several channels is available.

For airway and airport service, this newly designed product of RADIO RECEPTOR engineers and craftsmen represents the most advanced practice. This transmitter is intended for use at an airport for communication between ground and plane, or between two airports of an airway system for both long distance and local communication.

OPERATING CHARACTERISTICS

The transmitter assembly is composed of individual units, one for each RF channel, one for each modulator, and one for the rectifier power supply unit. The RF and modulator units are interwired and connected to operate from the common rectifier power supply unit.

FREQUENCY RANGE—2 to 20 mc. RF units are supplied with coils and capacitors to operate at a single specified frequency and output load. Components are available for operation on any other frequency and output load impedance within the limits specified.

POWER OUTPUT—2.5 KW continuous, 3 KW Intermittent service.

FREQUENCY CONTROL—Low temperature coefficient crystal control at a sub-multiple of output frequency.

RF LOAD IMPEDANCES—Grounded or balanced transmission line loads—50-700 ohms. Loading inductor or series condenser available on special order for working directly into reactive antenna.

TYPE OF TRANSMISSION—A-1 (CW Unmodulated telegraph), up to four simultaneous channels; or A-3 (telephone Modulated carrier), up to two simultaneous channels.

MODULATION—High level modulation of RF power amplifier by means of Class B audio modulator.

NOISE LEVEL—Carrier noise 40 db. below 100% modulation.

KEYING—High speed (200 words per minute) electronic keying standard. Slow speed keying of oscillator available on special order.

POWER SUPPLY REQUIREMENTS—230 volts 50/60 cycles, 3 phase.

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SINCE 1912 IN RADIO AND ELECTRONICS

Aerovias Braniff's Goal: 7,400 Miles in Mexico

AEROVIAS BRANIFF, S. A., the Mexican airline organized by Tom E. Braniff, president of Braniff Airways, Inc., Dallas, began its initial operations in



Stockdale

Dyer

Mexico April 4 with the opening of Douglas DC-3 service between Nuevo Laredo and Mexico City, with a refueling stop at Monterrey and a passenger stop at Victoria.

The initial operation of about 600 or so miles, with one round-trip daily, is only the first step in what Braniff hopes to develop into a domestic Mexican system operating 7400 miles of routes into almost every part of the country.

The second of the two DC-3s is scheduled to begin operations on a route between Mexico City and Merida, in Yucatan, and other segments will have to await the allocation of equipment.

To Give Personal Attention

Mr. Braniff expects to spend considerable time in Mexico devoting personal attention to developing the new company. His offices and an apartment for his own use in Mexico City occupy almost two full floors of the tall Edificio International, No. 1 Paseo de la Reforma, at the head of Avenida Juarez, the main avenue leading to the business area. Various other airlines are located in the same building or in nearby buildings.

On the Nuevo Laredo-Mexico City route, which connects with Braniff Airways—the Mexican airline will use the American Airlines airport at Monterrey, and American's auxiliary field at Victoria, although Aerovias Braniff expects to build its own airport and its own ground facilities at Victoria. At Merida, the airline will have to use the airport built by Pan American Airways under the U. S. War Department program since this is the only facility in the area.

Braniff contemplates spending \$1,000,000 in the first phase of the development program.

For some months prior to the opening of the initial service, Aerovias Braniff maintained a number of training classes in meteorology, radio and engineering, paying the students for attending the school. Most of the young men will occupy positions as station managers, communications men and in other capacities.

In mid-March there were about 50 students taking the courses and there

were about 25 employees in the company.

Operations manager is Frank Dyer, who was superintendent of communications for Braniff Airways at Dallas and who is on leave from the U. S. company.

In charge of traffic is Douglas Stockdale, who was with Pan American Airways five years, and during the past four years has been with Braniff. A U. S. citizen, Stockdale has lived in Mexico many years and knows both languages perfectly.

Alberto Sanchez Llorente, for 15 years treasurer of Compania Mexicana de Aviacion, S. A., Pan American's Mexican affiliate, is assistant treasurer of Aerovias Braniff.

Superintendent of communications is Antonio Pastrana, who has taught at the University of Mexico.

A number of men are on leave from Braniff at Dallas to aid in getting the new company started, and who have been in charge of training. These include R. M. Terrell, Walter B. Wiers, B. J. Jackson, and Harold Waite. The latter is superintendent of radio facilities.

Elias Gonzales C., for some time with Braniff Airways in Mexico City, will also be the local manager in Mexico City for Aerovias Braniff.

Stockdale has launched an intensive advertising campaign concentrating on the Braniff ambitions to operate throughout all of Latin America. The American company was recommended recently by a Civil Aeronautic Board examiner for a route from Houston to Merida and the Canal Zone, but another CAB examiner has recommended against the proposed acquisition of Aerovias Braniff by Braniff Airways.

Confident of Success

Whatever the outcome of the acquisition case, Tom Braniff says he will continue the Mexican company. From all of the evidence in Mexico, the new venture is being undertaken with full confidence of success. Legal and other barriers will be thrown in his way. Some of his routes are potentially profitable, others are not destined to have heavy traffic. But he intends to build adequate ground and communication facilities and build an organization that will be virtually all Mexican throughout.

Braniff is not following the usual trend in Mexico. Instead of starting with small equipment—and this often has been neces-



Tom E. Braniff

in Mexico City office.

sary because of inadequate airfields—he is launching the service with 21-passenger DC-3s. It is obvious that government officials have looked kindly toward his route plans and are extending considerable aid to the company.

Not generally known in the United States is the fact that the name Braniff is not uncommon in Mexico and that Tom Braniff has quite a few relatives in the country. The pronunciation of the name is different, but the name is known.

Aerovias Braniff is playing for big stakes. Its permits cover 7400 miles, 300 miles more than is covered by CMA, PAA's affiliate. It is one of the boldest ventures ever undertaken at one time. If it succeeds, Aerovias Braniff will be a major factor in aviation in the western hemisphere, for its routes are far-reaching in importance. Tom Braniff knows that he's got a fight on his hands, but the history of Tom Braniff is that he usually wins what he starts after. And although the U. S. airline has been plagued with competition and hemmed in from all sides, it has always maintained service on a par with the best transcontinental. If this same high caliber service is provided in Mexico, Braniff may be off to building a very important empire in Latin America.

W. W. P.



Jackson

Waite

Gonzales

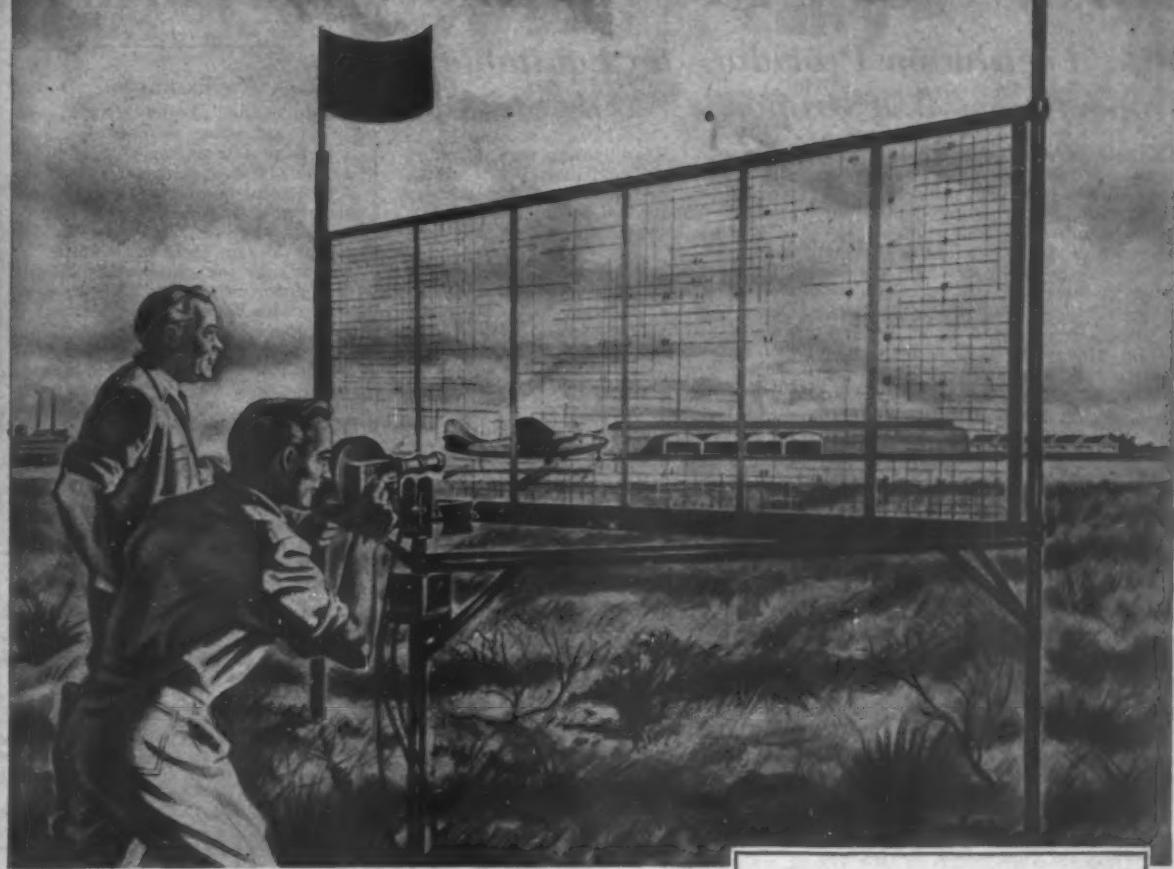
'Fancy Meeting You Here!'

For several months, Kenneth Mac Murtry, field representative for Pratt and Whitney, had been trying to catch up with Keith Kahle, vice president of Central Airlines. But every time Mac Murtry hit Oklahoma City, Kahle's headquarters, Keith was "out of town." Last fortnight Kahle was wheeled into Oklahoma City General Hospital with acute appendicitis. He had just settled down in bed when a voice, close by, said:

"Well, fancy meeting you!"

It was Mac Murtry, in the next bed. He had been relieved of his appendix just a few hours before.

THE TOUCH OF TOMORROW IN THE PLANES OF TODAY



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Across the "screen" flashes an airplane powered by the latest model Ranger engine.

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Through this and other carefully controlled scientific testing, Fairchild engineers are proving the efficiency, versatility and endurance of Ranger engines.

Constantly improved since its

inception, the Ranger engine today packs more power into an even more efficient package. Fairchild research and engineering skill have developed a flying power plant that is "inline for the airlines."

The emphasis is on efficient horsepower production; length of service between overhauls; ease of maintenance; and economy.

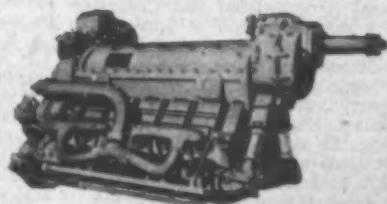
Today, flying over test fields in ships that are basic designs for the airplanes of tomorrow, Ranger models, like all products of Fairchild research and experience, provide a "touch of tomorrow in the planes of today."

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CAB Gives Congress Tax Allocation Formula

Asks Legislation Providing an Equitable Apportionment of Property Among States

THE Civil Aeronautics Board has suggested a solution to the knotty multiple airline taxation problem in a recommendation to Congress calling for legislation to provide for an equitable apportionment of taxable property among the states through which an airline's operations are conducted.

The statute would also prescribe methods under which this taxable property would be apportioned. Its administration and interpretation would be under the jurisdiction of either the Treasury Department or the CAB, working with an advisory committee of tax experts appointed by the states.

In its report to Congress, the Board criticized state taxation of aviation fuel used in interstate commerce and recommended that the Treasury Department make a study, in consultation with appropriate state officials, to work out an equitable relationship between the states and the federal government.

Personnel Taxation Condemned

The report also condemned the multiple taxation of flight personnel under state income tax laws and urged that the plight of all multi-state workers be remedied by cooperative state action, if necessary, under Federal leadership.

The report recommended that airmen operating aircraft in interstate and foreign commerce not be required to obtain state licenses or pay state license or registration fees.

The Board recommended that Congress prescribe a simple method of apportioning "the several tax bases used by the States and localities so as to insure an equitable distribution of the entire tax base property attributable to the continental United States—no more and no less—among the states in which air carriers' operations are conducted."

The CAB held that this apportionment could be accomplished by an apportionment formula "which reflects property used and business done in each of the states of operation."

These proposals may be subject to modification as experience is gained in the relatively new field of airline taxation, the Board said.

The CAB proposed two formulae of allocation to satisfy the requirements of various taxes—one being appropriate for property, capital stock and gross receipts taxes, the other for net income taxes.

For the first group, the recommended formula is comprised of (1) originating and terminating passenger, freight and express tonnage with a weight of 40%; (2) originating passenger, freight and express revenues assigned to the state of original departure with a weight of 40%, and (3) scheduled aircraft arrivals and departures (equated according to weight or capacity of the plane) with a weight of 20%.

The apportionment for property taxes should be restricted to the value of aircraft or to the value of all operating property less real estate and tangible personalty (c) having a fixed status, the

Board said. If originating mail revenues and originating and terminating mail tonnage can be made available without excessive compliance cost, these elements should be included in the appropriate factors.

For net income taxes, the Board recommended that the first two factors of the above formula be used with the same weights (40% of each), and a third factor, ground payrolls (total payrolls excluding flight crews), with a weight of 20%.

"These formulae make no provision for the treatment of non-operating real and personal property or nonoperating net income such as earnings from investments or contract operations," the Board said. "These items are of relatively minor importance, and it may be presumed that the situs for taxation in such cases can be definitely determined or is properly cared for by non-conflicting rules applicable to similar situations for corporations generally."

To administer the allocation formulae the Board recommended that a five-man advisory committee be selected from a panel named by some representative of the states, perhaps the Council of State Governments, to work with an existing Federal agency. Either the Treasury Department or the CAB would fill the latter role.

The Board emphasized in its 263-page

An Example:

Application of the CAB's proposed allocation formula is illustrated by this example using plane arrivals and departures:

The total number of arrivals and departures on the entire system of a particular air carrier is the denominator in each of a series of ratios, and the number of arrivals and departures in each of the several states in which operations are conducted is the numerator.

Thus, if a small carrier has 1000 arrivals and departures for a specific period and operates in four states, with 100 arrivals and departures in State A, 150 in State B, 250 in State C, and 400 in State D, the respective factors for these states are 10, 15, 25 and 40 percent. These percentages may be averaged with similar percentages based on tonnage or revenue, each factor appropriately weighed, to obtain an allocation formula.

report that the recommendation for "mandatory allocation in no wise affects the revenue powers of the states taken as a whole, but merely insures a uniform policy of apportioning tax bases among the several states in such a way that interstate operations will not be subject to any appreciable multiple and discriminatory taxation."

Early action was recommended in tax-

Analysis of Taxes Paid by Domestic Airlines

A N ANALYSIS of taxes paid by domestic air carriers shows that they increased from \$2,876,439 in 1939, to \$3,465,234 in 1941, to \$18,485,439 in 1943. The figures were compiled by the CAB in connection with its report to Congress on multiple airline taxation.

The CAB's study showed that the major tax burden was imposed by the Federal government, especially during the war years.

Federal taxes were 56.8 percent of total tax payments for 1939, 72.2 percent for 1941, and 89.4 percent for 1943, the increase resulting both from high wartime earnings and from increases in federal taxes.

States taxes were 37.7 percent of the total in 1939, 26.8 percent in 1940, and 9.4 percent in 1943. The taxes levied by local governmental units were 5.5 percent of total taxes in 1939, 3.0 percent in 1941, and 1.2 percent in 1943.

An analysis of the taxes imposed upon air carriers, classified according to measures adopted to determine the tax liability,

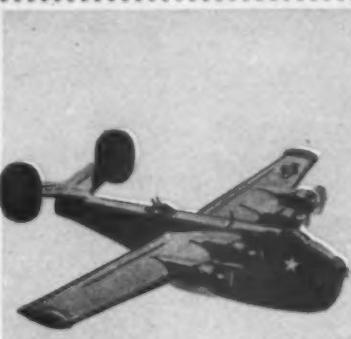
	1939	1940	1941	1942	1943
Total Taxes (amounts in thousands of dollars)	\$2,876	\$4,418	\$6,465	\$14,638	\$18,485
Percentage to Total					
Federal	56.8	62.9	70.2	87.0	89.4
State	37.7	33.3	26.8	11.5	9.4
Local ¹	5.5	3.8	3.0	1.5	1.2

¹ All property taxes are assumed to accrue to local governments. This ignores relatively minor property taxes by several states, but these are at least in part offset by certain local impositions in the "all other" category which is included in the state share.

These U. S. Navy Planes Carry Collins Autotune Transmitters



GRUMMAN TBF AVENGER

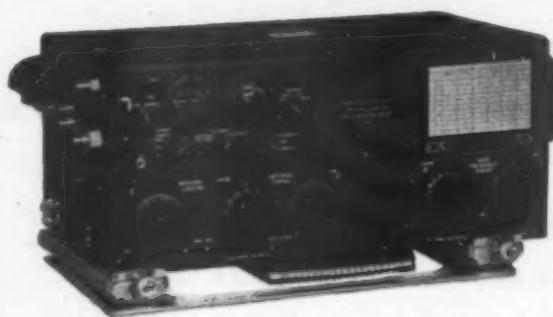


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Heat treated, alloy steel gives Aerols* super strength to withstand the terrific impact of landings. Yet their rugged cylinders are filled with soft, resilient air which, together with oil, effectively cushions and absorbs the landing shock.

Pioneered and perfected by Cleveland Pneumatic almost 20 years ago, Aerols are an established aircraft advancement — their reliability has been proved on every size of plane, in every climate, on every terrain.

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AIRCRAFT DIVISION • CLEVELAND 5, OHIO
Help Finish the Fight! Buy MORE War Bonds and Stamps!

AEROLS*

PNEUMATIC-HYDRAULIC (AIR-OIL)
SHOCK ABSORBING LANDING GEAR

Federal, State and Local Taxes Paid by Domestic Air Carriers Operating in
Continental United States
1939-1943

	Total				
	1939	1940	1941	1942	1943
Property Taxes	\$ 158,741	\$ 167,077	\$ 196,346	\$ 221,050	\$ 216,337
Social Security Taxes	833,061	1,047,371	1,309,419	1,161,510	1,380,630
Income Taxes	238,198	1,506,188	2,642,776	11,079,580	14,553,357
Motor Fuel Taxes	904,628	1,465,384	2,011,817	1,787,516	1,772,827
Lubricating Oil Taxes	29,494	46,096	54,367	44,128	57,324
Capital Stock Taxes	97,204	150,590	302,778	308,042	586,894
Gross Receipts Taxes	2,693	6,235	14,947	13,492	10,917
Aircraft Licenses	925	1,005	1,182	839	835
All Other Taxes	9,395	25,372	31,802	23,556	27,728
Total Taxes Paid	\$2,576,439	\$4,417,997	\$6,465,234	\$14,637,709	\$18,495,429

Federal

Social Security Taxes (Total)	\$ 245,154	\$ 320,646	\$ 419,177	\$ 496,590	\$ 575,464
Old Age Insurance	178,456	250,002	321,928	373,157	439,996
Unempl. Compensation	65,088	76,044	97,249	118,433	139,372
Income Taxes (Total)	807,161	1,456,119	2,580,713	10,089,436	14,346,127
Normal Income Tax and Surtax	781,705	1,446,897	2,586,849	10,158,187	10,158,652
Excess Profits Tax	-----	-----	-----	-----	3,588,470
Declared Value Excess Profits Tax	24,456	9,222	2,146	737,299	806,005
Motor Fuel Tax	674,010	832,950	1,208,922	1,016,845	999,507
Lubricating Oil Tax	29,163	46,229	53,981	43,777	56,779
Capital Stock Tax	78,061	119,220	266,802	286,140	544,875
All Other Taxes	-----	-----	-----	8	459
Total Federal Taxes	\$1,633,549	\$2,781,174	\$4,539,597	\$12,736,796	\$16,529,311

State and Local

Property Taxes (Total)	\$ 158,741	\$ 167,077	\$ 196,346	\$ 221,050	\$ 216,337
State Assessed	44,453	44,585	55,636	65,967	68,060
Locally Assessed	114,288	122,492	140,610	155,083	148,297
Unempl. Compensation	567,997	720,725	790,342	664,930	682,156
Normal Income Taxes and Surtaxes	31,037	50,049	52,061	190,144	203,239
Motor Fuel Taxes	432,618	632,634	802,895	750,671	773,086
Lubricating Oil Taxes	331	357	296	345	545
Capital Stock Taxes	19,243	31,369	35,976	35,902	42,019
Gross Receipts Taxes	2,693	8,235	14,947	13,492	10,917
Aircraft Licenses	925	1,005	1,182	839	835
All Other Taxes	9,395	25,372	31,802	23,556	27,728
Total State Taxes	\$1,342,890	\$1,636,823	\$1,925,637	\$1,900,913	\$1,956,128

ing the problem of multiple taxation "before the states become dependent on this source of revenue, while a change in the procedures relating to these taxes will not raise a major public issue, and while the taxing authorities are in the process of adapting their tax systems to the new form of transportation."

In its criticism of state taxation of aviation fuel, the Board said that such taxation "has developed as an inadvertent by-product of the tax imposed upon motor fuel for highway vehicles."

An equitable legislative solution to the problem was recommended, with the Board urging that such a proposal give consideration to the exclusive taxation of aviation gasoline by the Federal government and the ultimate exclusive taxation of motor fuel by the states with a proposal for sharing of the tax revenues between the federal government and the states.

The Board's tax study, authorized by Congress July 3, 1944, gave consideration to a self-executing federal statute as a mechanism for dealing with the allocations problem, but favored agency administration because of its greater adaptability and flexibility to meet changing tax conditions.

"The possibility of effective treatment of multiple taxation by the states with-

out any aid from the Congress is extremely doubtful," the Board said.

With respect to the treatment of valuation problems and the definition of net income, the Board held that "greater uniformity in property valuations by the several states undoubtedly would ensue if state and local assessment officials had direct access to some authoritative and pertinent factual information."

"A central fact finding agency, such as the Civil Aeronautics Board, could and should provide any pertinent data which it possesses, together with any qualitative interpretation having a material bearing on their use by assessment authorities."

Although the Board was empowered by Congress to study multiple taxation problems of U. S. territorial carriers and international multiple taxation with respect to U. S. flag carriers, it deferred action on the grounds that these problems required further study. The Board said it would submit a supplemental report at a later date with respect to territorial tax problems.

"The appropriate procedure to eliminate international multiple taxation appears to lie in the conclusion of reciprocal treaties making international air carriers subject to the exclusive tax jurisdiction of the country in which the carrier is organized and its planes regis-

CAB Asks Authority To Control Security Issues of Airlines

The CAB in its annual report for the year ended June 30, 1944 has reiterated its request to congress that the five-man agency promptly be granted authority by legislation to control security issues and capitalization of air carriers.

"It is necessary, in order to prevent the development of economically unsound capital structures, for the Board to have the power to approve the issuance of securities," the report said, adding that such agencies as the Interstate Commerce Commission and Federal Power Commission already have such authority.

The report reflected the healthy financial condition of the airlines, pointing out that total cash dividends paid by 10 carriers during the 1944 fiscal year amounted to slightly over 2.9 million dollars, compared with slightly less than 2.3 million dollars paid by 8 carriers during the year ended June 30, 1943.

Additional capital stock issued by the airlines during the fiscal year 1944 amounted to about 21.6 million dollars, thereby increasing the amount of outstanding stock from 23 million dollars to 54.6 million dollars. Common stock accounted for just over 70% of the total, the report said.

The Board said that it had decided 67 applications, including five for new domestic routes, an equal number for domestic route extensions, 15 for additional stops, three foreign air carrier permits, and mail authorization on one domestic route. Thirteen mail rate decisions were issued by the Board during the fiscal period.

The report noted that progress had been made in the securing of simple, clear and definite tariffs, but that much remains to be done. The Board granted 29 applications for permission to establish tariff changes during the fiscal period, partially granted and denied one. Four were voluntarily withdrawn by the applicants.

The report disclosed that the Board has undertaken a three-way investigation concerning potential accidents as a result of failure of light aircraft engines. The three points under study are: (1) stoppage in the air; (2) fuel and exhaust system fire hazard possibilities; (3) carburetor and induction icing.

The report covered such other items as the Board's activities in launching its pattern of international routes, its feeder-pickup investigation, and the war-time record traffic loads being carried by the commercial airlines.

tered," the Board said in its letter of transmittal to Congress.

"The character of the tax treatment accorded to foreign-flag airlines by their respective countries must be the subject of further study before final recommendations can be made with respect to the taxation of United States-flag international carriers by the several states. Until international air commerce returns to normal, it will probably be unwise to attempt the formulation of final recommendations with respect to the tax position of United States-flag international carriers."

Argument in Aerovias-Braniff Case Bares International Issue

EAL, PAA Say Mexican Activities in Violation of CAB-State Dept. Policy

ORAL ARGUMENT before the CAB last fortnight on the applications of Braniff Airways and T. E. Braniff to acquire Aerovias Braniff, a Mexican company, bared some controversial issues on international policy.

Roger J. Whiteford, Braniff counsel, held that the efforts of his clients in establishing the Mexican airline were not in violation of the previously announced policy of the CAB and the State Department.

Conversely, he said, the Mexican arrangement would be conducive to better service between the U. S. and Mexico, and that formation of the Mexican company with American capital was carrying forward the "good neighbor" policy.

Both Eastern Air Lines and Pan American Airways, interveners, held that Braniff's activities in Mexico violated the CAB-State Department policy which was directed at the activities of domestic airlines dealing individually with foreign governments for landing rights and other concessions.

Whiteford's reply to this allegation was that Aerovias was a Mexican, not a domestic airline. He questioned the Board's jurisdiction of any control over Aerovias in its applications to the Mexican government for routes, since it is a Mexican corporation and not a citizen of the U. S.

Both Pan American and Eastern took the stand that Braniff's activities in Mexico jeopardized the position of applicants in the CAB's pending Latin American case, and that should Braniff's acquisition be approved, then Braniff would be free to operate any place in Latin America it sees fit.

Cites Havana Convention

Whiteford declared that regardless of the Board's action on the acquisition, Aerovias would continue to operate, but he denied that it would be possible for Braniff Airways to set up an integrated international system, since the Havana Convention would not permit such an arrangement.

In response to a question from CAB Member Harilee Branch, Whiteford said that for the \$206,000 involved in the transfer of the Mexican company to Braniff Airways ownership, T. E. Braniff would be repaid for his original investment in the capital stock of Aerovias Braniff. This figure did not include the cost of aircraft, he said.

John C. Pirie, Pan American counsel, challenged Whiteford's statement that the only type of certificates granted by the Mexican government prior to the start of operations were of a temporary nature. Pirie said that permanent certificates can be granted at the outset of an operation.

Pirie characterized Braniff's action as a subterfuge for extending Braniff's operations into the foreign field. He was joined in this allegation by E. Smythe Gambrell, Eastern counsel, who called on

the Board to "stop this thing right now before it gets fashionable."

Gambrell declared that Braniff "put on a false face and a sombrero hat" in its negotiations south of the border in an attempt "to substitute the laws of Mexico" for those of the U. S. in furthering its international plans.

Louis Goodkind, public counsel, recommended that the Board disapprove the acquisition for Braniff Airways without prejudice, but that Mr. Braniff's control of the Mexican company be approved. He said that Mr. Braniff's control of Aerovias would result in these benefits to the public:

1. Integration of service on international flights;
2. raising of the standards of the Mexican operations through the benefit of technical developments of the domestic operator;
3. promotion of air transportation generally through joint advertising and publicity efforts of the Mexican and U. S. companies.

Whiteford maintained that the money to be invested in the Mexican company belonged to the stockholders of Braniff Airways, that they had the right to in-

CAB Calendar

May 1—Prehearing conference, show cause order, American Airlines' mail pay. (Docket 1088) (10 a. m., Room 5417)

May 24—Hearing, Southeastern States case (Docket 591 et al) (Sedgefield Inn, Greensboro, N. C.)

Oct. 1—Hearing, Mississippi Valley case (Docket 548 et al) (Tentative)

vest it as they saw fit, provided such action was not adverse to the public interest.

The question of Mr. Braniff's control of Braniff Airways came in for some discussion after Whiteford argued that his 34% stock ownership could be interpreted two ways. Both Pirie and Goodkind held that there was no question of Mr. Braniff's control.

Pirie emphasized that the service provided by Aerovias Braniff-Airways offered nothing that cannot now be provided by presently operating companies. The diversionary effects to Pan American and CMA, its subsidiary in Mexico, would be damaging if Braniff were allowed to carry out its plans, he said.

Airlines Are Marching Steadily Towards Excess Profits Bracket

THE healthy financial situation of the airlines, brought about by unprecedented increases in commercial revenues, is resulting in a steady march toward the excess profits bracket. Two carriers are already within the bracket, and others may join them before the end of 1945.

This situation is unique to the point of paradox, since under the provisions of the internal revenue code the airlines are exempted from the excess profits tax for any taxable year beginning after Dec. 31, 1939, "if for any such year the compensation which they received from the United States for mail transportation is equal to or larger than their taxable excess profits computed without regard to this provision."

The formula which determines whether a carrier may or may not enter the excess profits bracket, therefore, is the relation of adjusted excess profits net income to mail pay. If the adjusted excess profits net income, after deduction of mail revenue, is zero or less, then the carrier escapes the excess profits bracket.

The tax blow falls on the carrier, however, if it shows as much as a dollar of adjusted excess profits income. If such is the case, then the formula, which allows for deduction of mail revenue, immediately reverses itself, and the carrier must add mail pay to commercial revenues for the purposes of determining its adjusted excess profits net income.

All other factors being equal for the purposes of taxation, this formula could result in a discriminatory situation between two carriers of comparable size by the simple fact that one may have mail revenue of sufficient volume to keep it

out of the tax bracket, while the other may have to pay off on an equal amount of commercial revenue.

Here is an example of how the excess profits tax formula could work for two carriers of equal calibre:

Carrier A has taxable income from all revenues of \$2,000,000, and Carrier B the same, but Carrier A's mail pay amounts to \$1,800,000, as against Carrier B's \$1,700,000. Each has an excess profits credit of \$200,000.

Under the formula, the excess profits credit of \$200,000 will be deducted, leaving adjusted excess profits net income of \$1,800,000 for each carrier.

From this latter figure the mail pay is deducted for purposes of determining whether the carrier is liable for the excess profits tax.

In the case of Carrier A, the result is zero, thus taking it out of the excess profits bracket, but Carrier B cannot show such a result, therefore the entire \$1,800,000 of income becomes subject to excess profits tax of 35%, or a net of approximately 86% after the 10% postwar refund.

Thus Carrier A pays a total tax (including income and excess profits) of \$800,000, leaving an income after taxes of \$1,200,000, while Carrier B pays a total tax of approximately \$1,350,000, leaving net income of \$650,000.

Many other factors are involved in the formula, of course, and this would be an extreme example of the inequities which might result from it, but it serves to point up the enigma faced by airline management.

Two main cuts are available to man-

Where each ounce counts—

lightness is vital



This magnesium ammunition box flies with every B-29

There's no room for useless dead weight in giant bombers like the Boeing B-29 Superfortress. That's why magnesium—lightest of all structural metals—is on the job in every Superfort that goes to war.

Dowmetal Magnesium Alloy sheet of .125-inch thickness forms the bottom of the B-29's 50-calibre ammunition box, and .051-inch sheet forms the side sections. If this same sheet were of steel, the weight would be more than four times as great.

A most satisfactory application for this outstanding light-weight metal—that's the way technical men describe this weight-saving job!

It's only one of many important tasks that Dowmetal Magnesium Alloys are doing in the aircraft industry. Dow takes active part in development work in this field, and has compiled a wealth of technical data on magnesium fabrication. Get in touch with the nearest Dow office for complete engineering service.

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agement in avoiding the excess profits bracket—to cut commercial rates and/or increase expenses. Both have ramifications which must be given consideration.

Observers point out that the excess profits situation is more or less temporary and flexible, and that the airlines would therefore probably hesitate to make any such permanent move as to cut rates to a point that would be financially disastrous at a later period.

The CAB and the public generally would, of course, frown on any flagrant increases in expenditures on the one hand, while war-time restrictions on equipment, etc., prevent the carriers from making justified expenditures in the way of development on the other.

Sound business practice would also result in the airlines resisting high costs resulting from inefficient operations because of the competitive disadvantage they would experience after the war.

Chance for Adjustment

It should be remembered also that while an airline might fall into the excess profits bracket this year, it could recoup such tax payments one or two years hence by a material change in its earnings.

For example, if the carrier found itself in the excess profits bracket in 1944, but showed losses in its operations for 1945 and 1946, it could adjust its 1944 taxable income by carrying back those losses and the unused excess profits credit to the preceding two years.

The same formula would work in opposite manner to permit similar adjustments to carry over from 1943 and 1943 to 1944.

Any tax monies thus recouped would return to the airline tax free. Thus the airline predicament in this tax picture has another unique twist in that excess profits payments could actually develop into a hidden reserve for the carrier.

Another factor to remember is that the excess profits statute is primarily a wartime measure, and its planners apparently did not anticipate that the airlines would attain their present financial stature, with the resultant tax problems.

Thus far Eastern Air Lines and Hawaiian Airlines are the only carriers in the excess profits bracket, but there is a possibility that American Airlines may fall into the bracket this year.

Argentina Planning Many Postwar Pilot Services

In anticipation of an increase in private flying after the war, Argentina is going forward with plans to offer the individual pilot services similar to those rendered to the motorist. The planes are under the direction of the Automovil Club Argentino, which will operate 28 airfields. The airports will cost an estimated \$2,000,000.

A part of the more than 200 motor service stations operated by Argentino for motorists, will be utilized for the benefit of flyers. Besides accommodations for landing, there will be provisions for servicing planes, trip data, etc. A trained corps of attendants will be employed to care for the flyers' needs.

NAL to Buy Caribbean-Atlantic

NATIONAL AIRLINES will acquire Caribbean-Atlantic Airlines of Puerto Rico, holder of a certificate on Route 59, G. T. Baker, NAL president, announced last fortnight. The acquisition is subject to the approval of the Civil Aeronautics Board.

Baker was in San Juan completing details of the acquisition with Dennis Powelson, president of Caribbean-Atlantic, and chief stockholders of the company when the announcement was made. Terms of the deal were not announced.

Baker said that National would furnish Lockheed Lodestar equipment to the Puerto Rican company, but that no changes in personnel or management of Caribbean-Atlantic were contemplated. National management will assist and advise in improving and modernizing the operation.

Caribbean-Atlantic was certificated to operate by the CAB July 23, 1942, with the certificate effective from Sept. 17, 1942, the date of Presidential approval. It was authorized to operate with persons, property and mail.

Route 59 runs between the terminal points San Juan and Mayaguez, Puerto Rico, via Ponce; and between San Juan and Christiansted, St. Croix, V. I., via Charlotte Amalie, St. Thomas, V. I. The carrier has conducted no operations on the San Juan-Ponce-Mayaguez segment, however.

Caribbean-Atlantic's consolidated balance sheet as of Dec. 31, 1943, showed total liabilities and net worth of \$111,586. Total current assets were listed at \$58,400, plus these asset items:

Total investments and special funds, \$6,468; property and equipment, \$45,066; total deferred charges, \$1,652.

Total current liabilities were listed at \$11,155, plus these items: long term debt, \$3,000; operating reserves, \$28,696; total capital stock outstanding (common), \$41,700; unappropriated earned surplus, \$27,033.

Equipment as of Dec. 31, 1943, included four three-engine Stinsons used in revenue service, and one Howard DGA used for non-revenue purposes. Undepreciated book value of the aircraft was \$10,745, and aircraft engines, \$10,364. Hangar, shop and ramp equipment was valued at \$10,027, and buildings and improvements on land owned at \$13,185.

Operating statistics for 1943 show that Caribbean-Atlantic flew a total of 246,648 miles, carried 23,862 passengers with a revenue passenger load factor of 79.49 per cent. It carried 32,301 pounds of mail 2,717,651 mail pound miles, and 185,599 pounds of express 15,841,352 express pound miles.

Total revenues for 1943 were \$217,016, made up of the following items: Passenger revenue, \$194,232; express and freight, \$15,588; excess baggage, \$7,035; charter and special flights, \$100.

These revenue items were subject to a downward adjustment, however, as pointed out in the CAB's show cause order to set mail pay for Caribbean-Atlantic. The carrier has received no mail pay for its routes, this item now being in the process of determination under the show cause proceeding.

Baker said that Caribbean-Atlantic would be operated as a subsidiary. Na-

tional has applications on file with the CAB in the Latin American case, which propose service to the Caribbean area.

Certification of one of these routes would offer the possibility of a connection of service between the two companies. Caribbean-Atlantic was at one time an applicant in the Latin American case, but later withdrew applications for service between San Juan-New York, San Juan-New Orleans, and San Juan-Jamaica.

Canadian Lines May Get Some Relief From Paper Work Burden

Some relief from the burden of paper work required from scheduled and non-scheduled air transport companies in Canada by the Air Transport Board is expected as a result of a meeting held recently in Ottawa. Members of the Air Transport Committee of the Air Industries and Transport Association, after conferring with Board representatives, commented on the sympathetic attitude of the Board and felt that some relaxation of demands for long monthly reports may be expected.

Operators told the ATB that many of the monthly reports could be discontinued, substituting annual reports in their place, and that the duplication of reports covering similar topics, now required to be filed with the Air Transport Board, the Dominion Bureau of Statistics and the Department of Transport should be eliminated.

The Board representatives indicated to the Committee that steps would be taken to eliminate the necessity for duplicating reports, although in some cases this cannot be done at once.

One focal point of criticism by transport operators, the Transportation Bill, came up for discussion when the Committee presented a sample form for flight reports. Members stated their belief that if operators filled out these forms and kept them on file for two years it would obviate the necessity of daily filing of a transportation bill after every non-scheduled service. However, Board members postponed decision, stating their opinion that the daily filing of transportation bills is necessary in case of complaints, to detect infringements on licenses and to determine when scheduled service is required in any area.

United Plans to Spend

35 to 55 Million Dollars

United Air Lines is prepared to spend between 35 and 55 million dollars in postwar expansion of operations and facilities, William A. Patterson, president, declared following his re-election at the annual stockholders meeting in Chicago last month.

United has 15 million dollars of free cash on hand to launch the postwar program, Patterson declared.

All directors of United were re-elected, and the directors subsequently re-elected all officers.



Associated Press

Nose close-up clearly shows the double-fuselage construction of the record-breaking C-97. With a length of 110 ft. 4 in. and a wingspread of over 141 ft., the ship exceeds all existing Army Air Force transports in range, payload, and size.

Press Association, Inc.



"Bite size" for the big plane is this 1½-ton truck, shown ascending the special ramp in the tail. Identical with the B-29 except for its huge double-decked fuselage, the C-97 can carry big trucks, light tanks, or 100 troops 2000 miles non-stop in less than 10 hours.



Press Association, Inc.

Big Brother

Cargo counterpart of the famed B-29 is the tremendous new Boeing C-97, unveiled in a burst of glory when it recently made a record-shattering flight from Seattle to Washington, D. C., averaging 383 miles an hour. Whether carrying a full load in its 10,000 feet of cargo space or 100 fully-equipped troops, one thing is certain — the C-97 is in a class by itself when it comes to helping our Army "git thar fustest with the mostest."

The responsibility for powering this mammoth ship lies in four Wright 2200-h.p. engines, and playing an important part in their steady, dependable performance are CECO carburetors. Of a highly specialized design, these carburetors are built to operate at pressures ranging from sea level to 40,000 feet altitudes . . . under external temperatures running from 60° below zero to 150° above.

Every man and woman at Chandler-Evans is proud that the precision and quality of the carburetors they make is such that they have been selected as integral parts of the power plants on this superb new plane.

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Few Applications for New Routes Filed with CAB Docket Section

APPLICATIONS filed with the CAB's Docket Section for new routes showed a lull during the past fortnight. Five presently certificated carriers and three prospective carriers were represented among the applicants.

Following are the applications filed:

Alaska Air Lines

This carrier has filed an application with the CAB asking that its present passenger-property certificates between Nome and Kotzebue, via Deering and Oandie, be amended to include mail. Alaska is now performing mail service on the route under a temporary star route contract which expires June 15, 1945. (Docket 1831).

American Air Lines

This carrier has filed an amendment to its application under Docket 395, to extend Route 23 from Cincinnati to New York, via Pittsburgh, Wilmington, Del., and Philadelphia.

James Bruce and American also have filed a joint application with the CAB seeking approval of an interlocking relationship for Bruce to serve as a director of American and as a director of American-Hawaiian Steamship Co. (Docket 1828).

Colonial Air Lines

This carrier has filed an application with the CAB to extend Route PAM 1 from New York to Washington via Reading, Philadelphia.

Philadelphia, Pa., and Baltimore, Md. Applicant asks both non-stop and skip-stop authorization between New York and Washington. (Docket 1834).

United Air Lines

This carrier and John J. Mitchell of Santa Ynez, Calif., have filed a joint application for approval of an interlocking relationship for Mitchell to serve as a director of United and as a director of Chicago Tunnel Terminal Corp., holder of all of the capital stock of two common carriers. (Docket 1833).

Earnest Long

This individual of 1821 Midvale Ave., Los Angeles, Calif., has applied to the CAB for a certificate of convenience and necessity on loop route of Los Angeles via Palm Springs, Las Vegas, Nev., Reno, Sacramento and back to Los Angeles. (Docket 1827).

Peck Rice

This individual has filed an application with the Alaskan office of the CAB at Anchorage for a route from Bethel to Naknek, via Dillingham. (Docket 1832).

Thompson Airways

This applicant of 101 W. 39th St., Baltimore 10, Md., has applied to the CAB for a certificate of convenience and necessity for a route between Pittsburgh and New York, via Washington, Baltimore, Salisbury, Md., Ocean City, Md., Rehoboth, Del., Cape May, N. J., Atlantic City and Philadelphia. (Docket 1826).

CAB to Hold Hearing on Discount Travel Plan Despite Recent Action of Airlines

THE domestic airlines, through their agent, M. F. Redfern, have withdrawn the proposed 5% discount tariffs on the air travel card plan and government travel, but CAB sources indicated that this would make no difference in the Board's plan to hold a hearing which will air the whole discount travel plan. The discounts were to have been effective March 25.

The CAB called for a hearing on the discounts to determine if the proposals were discriminatory, but as yet no date has been set for the hearing. It was understood that had the airlines cancelled the tariffs covering the air travel and government discount plans, then the Board would have given consideration to cancelling its investigation.

As the tariffs now stand, all discounts on the two travel plans are suspended for the duration and six months thereafter, at which time a 15% reduction would again become effective, as was the case prior to 1942. Air travel cards may still be used, but they carry no discounts, although the deposit of \$425 remains a requirement for their issuance.

The cards have been particularly popular with large corporations whose volume of travel is sufficiently great to benefit from the discounts offered under the plan. These card holders have displayed

a mixed reaction to the Board's investigation, some holding that they agree with the Board's attitude, others indicating that they would like to have a voice in the hearing in support of the travel card plan.

The Board's chief complaint about the card plan is that the holder, under either the proposed 5% discount or the normal 15% peacetime discount, actually receives transportation at a cheaper rate than the passenger who pays cash for his ticket, yet both receive identical service.

'Annual Airline Statistics' For 1943 Released by CAB

"Annual Airline Statistics" of the domestic air carriers covering the calendar year 1943 has been released by the CAB. Distribution will be made to the airlines and others in the industry. The general public may obtain copies from the Superintendent of Documents, Government Printing Office, Washington (60c).

The tabulations of financial and statistical data summarize the volume and type of revenues and expenses of the airlines during 1943, mileage flown, amounts and types of traffic carried, utilization of aircraft, and other related facts. Breakdowns are made for individual carriers and routes.

SPB Allocates 15 DC-3s To U. S. Carriers

United States domestic, territorial and American foreign flag carriers received collectively 15 additional Douglas DC-3 transport planes in the 10th allocation by the Surplus Property Board on April 11. Two Lockheed Lodestar types were assigned to private companies engaged in war activities while four DC-3s and one Lodestar went to foreign applicants.

This allocation brought the U. S. domestic airline fleet to 375 planes or 16 above the prewar high of 359. Inquiry has revealed that no change in the passenger priority situation is expected after V-E day. Military authorities are convinced that when the war is over in Europe, the increased tempo of operations against Japan will require the continuance of high priority travel restrictions on personnel movements to the Pacific theater.

The latest allocation of the Surplus Property Board was to the following applicants:

Domestic Applicants

Douglas (DC-3 type)	
Alaska Airlines	1
American Airlines, Inc	2
C & S	3
Eastern Air Lines, Inc	1
Northwest Airlines, Inc	1
Pan American	2
TWA	2
United Air Lines	2

Lockheed (Lodestar type)

Cities Service Co.	1
General Mills Inc.	1

Foreign Applicants

Servicos Aereos Cruzeiro do Sul, Ltda.	1
Trans-Canada Air Lines	1
Divisao de Exploracao dos Transportes Aereos de Angola (DTA)	1
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The board also announced the issuance of an exception to SWPA Regulation No. 4 permitting disposal of Budd RB-1 stainless steel cargo planes by negotiated sale. The board's order provided that these planes be sold at the highest price offered, with due consideration to the limited quantity of spare parts available. Interested applicants for the Budd planes should apply to the disposal agencies, Reconstruction Finance Corp. in the case of domestic applicants and Foreign Economic Administration in the case of foreign applicants.

Tie Down Patent Assigned to UAL

Patents granted to Joseph S. Martin, San Carlos, Calif., for a cargo tie-down harness have been assigned by the inventor to United Air Lines. The new tie-down consists of a master ring strap consisting of terminal rings connected by alternate strap portions, and several auxiliary strap sets each of which includes a cinch strap, an anchor strap and a buckle for adjustability connecting the two. Both the cinch and anchor straps have end rings which can be quickly fastened either to the rings of the master strap or to fixed supports such as floor fittings.

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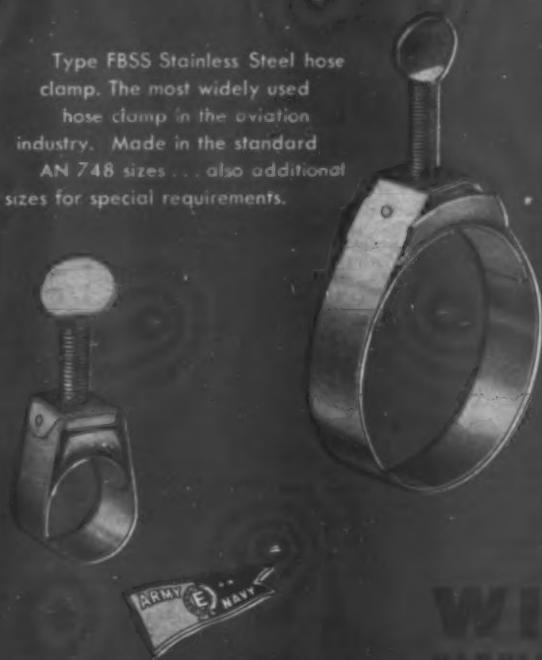
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Type WWD Stainless Steel worm-drive adjustable hose clamp. Made in eight sizes to cover the entire range of applications.

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See Banks for Pictures of Our New Hose Clamp Models

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Dependability has been recognized by the Wittek Manufacturing Company during its 25 years of hose clamp manufacturing experience as a foremost requirement in any hose clamp design. Wittek assures this dependability by the selection of basically sound designs... the use of high-grade materials and the application of good workmanship. Today Wittek offers two distinctly different hose clamp designs—each of which meets the requirements of Specification AN-FF-C-406 A.

TYPE WWD—an adjustable worm drive hose clamp made of stainless steel and designed to take full advantage of the superior physical properties of that material. Note the compact streamlined housing... the hardened one-piece thumbscrew—PLUS a new exclusive Wittek feature—an inner band of Stainless Steel accomplishing the two-fold purpose; (1) protecting the hose from the serrations in the outer band, and (2) distributing the load uniformly to provide greater strength and superior sealing characteristics.

TYPE FBSS—an improved Stainless Steel version of Wittek's basic FB design—now incorporating a bridge extender—in all sizes. This is the most effective hose clamp for all applications where an adjustable clamp is not necessary.

Hose Clamps for all requirements, made by Wittek—specialists in hose clamps and their applications.

Aviation
HOSE
CLAMPS



New Air Services

New Schedules in Alaska

Wien Alaska Airlines, Inc., of Fairbanks, Alaska, announces the inauguration of new multi-motored transport schedules throughout the territory of Alaska. Principal flights are between Fairbanks and Nome carrying passengers and cargo for the Seward Peninsula and points west including St. Lawrence Island, Kotzebue, and the Diomede Islands.

The airline's new planes are twin engined Boeing 247-D transports released by the U. S. Army through the Civil Aeronautics Board. The re-modified Boeings are decorated in a blue and silver motif, are fully equipped, and operate with a crew of three, including stewardess. In addition to service to the major communities in the Territory, Wien also serves the Point Barrow area, the most northerly point served by any American airline.

Las Vegas-to-Reno

Nevada Pacific Airlines announces the inauguration of daily scheduled service on an intrastate route between Las Vegas and Reno. The company is using single-engine Fairchildts.

New PAA Flight

Pan American World has inaugurated a new flight serving Camaguey, Cuba; Kingston, Jamaica and Port au Prince, Haiti. Leaving Port au Prince on Friday at 6:30 a.m., the plane arrives in Camaguey at 8:35 a.m. and Kingston at 10:35 a.m. The return trip leaves Kingston at 11:30 a.m. arriving at Camaguey at 12:35 p.m. and Miami at 4:30. The return trip on Thursday leaves Miami at 10 a.m. and, stopping at Camaguey and Kingston, arrives in Port au Prince at 6:10 p.m.

C. & S. Resumes Peoria Service

Chicago and Southern Air Lines was to have resumed daily air service to Peoria, Ill., on May 1, discontinued eight years ago because of inadequate airport facilities. Flight 11 originating at Chicago will stop at Peoria at 8:09 a.m. arriving at New Orleans at 2:10 p.m. after stopping at St. Louis, Memphis and Jackson. The return flight leaves Memphis at 7:40 arriving at Peoria at 10:41 and Chicago at 11:45.

Tulsa-to-New Orleans Soon

Mid-Continent Airlines, Inc., expects to inaugurate service over its newly certificated route between Tulsa and New Orleans early this summer, according to a company announcement. Airway and ground facilities are now being installed and through surplus planes acquired by the company last January.

CAA's New Traffic Control Center at New Orleans To Eliminate Jams at Memphis

The CAA will open its 25th domestic airway traffic control center at New Orleans within the next few weeks, T. P. Wright, CAA Administrator, reports. The new center will relieve some of the traffic volume from the Memphis center. Charles Clift, formerly chief inspector of the CAA's fifth region, will be chief controller of the new center, which will have control of all airways flights within the following area: 25 miles southeast of Shreveport, 23 miles west of Beaumont, 25 miles south of Jackson, 25 miles southwest of Maxwell Field, 25 miles east of Crestview.

CAB Orders Affecting Air Carriers

3378—Denying City of Indianapolis permission to intervene in Latin American case (Docket 325 et al).

3374—Authorizing American Airlines to institute non-stop service between Washington and Memphis, and Knoxville and Memphis.

3375—Dismissing application of U. N. Airlines (Docket 1306).

3380—Denying petitions of Chicago & Southern and Braniff Airways for reconsideration of Board's order in Southeastern States case (Docket 301 et al).

3381—Amended order of consolidation in Southeastern States case (Docket 301 et al).

3382—Granting City of Detroit permission to intervene in Latin American case (Docket 325 et al).

3383—Approving interlocking relationships of Continental Air Lines and Josiah G. Holland (Docket 1782).

3384—Approving interlocking relationships of TWA and Thomas B. Wilson (Docket 1725).

3385—Dismissing complaint of United Airlines against TWA (Docket 1477).

3387—Granting National Airlines petition for reconsideration of Board's consolidation order in Florida case (Docket 480 et al) with respect to Docket 1384; denying National's petition with respect to Docket 1387.

3388—Withdrawing application of Carolina Airways (Docket 1139) from Southeastern States case.

3389—Dismissing application of Blue Grass Airlines (Docket 937).

3390—Dismissing application of Kentucky-Tennessee Airlines (Docket 229).

3391—Authorizing Northeast Airlines to inaugurate service on Route 65.

3392—Dismissing application of Philadelphia and Eastern Airlines (Docket 887).

3393—Authorizing American Airlines to inaugurate service between Oklahoma City and Tulsa, Okla., on Routes 4 and 23.

3394—Approving interlocking relationship of Basair, Inc., and W. F. Long.

3395—Dismissing application of Shawmut Air Freight & Transport Co. (Docket 831).

3396—Denying American's request for non-stop authority between Oklahoma City and Tucson, Ariz., and between Phoenix and Oklahoma City.

CAB Roundup

Orders Affect Northeast, AA

The CAB has authorized the inauguration of service over two recently certificated routes. The orders permit Northeast Airlines to begin service over Rt. 65, which runs between Boston and New York, recently acquired by Northeast, and to American Airlines for service between Oklahoma City and Tulsa on its new transcontinental "cut-off."

Revision Extended

The CAB has extended to Oct. 8 a revision of a special civil air regulation (No. 319) which waives the requirement that airline pilots must make familiarization landings at new stops on a regular route without passengers. The waiver is effective when it is known that the pilot is qualified. The measure was necessary because of the return of additional equipment to the airlines which has enabled them to open new services and re-establish some curtailed by the earlier war service pattern.

Would Modify Restrictions

Public Counsel Marie P. Lyon has recommended by brief that the CAB modify the

present restrictions on Braniff Airways' certificate to serve Denver, Colorado Springs and Pueblo, Colo., to provide that such service be given on flights originating and terminating at Oklahoma City, or Fort Worth-Dallas, Tex., or points east and south thereof on Route 11.

AA Prehearing May 7

Prehearing conference on the CAB's order to show cause why American Airlines' mail pay should not be reduced from 60c to 2¢ per ton mile will be held May 7 before Examiner Charles J. Frederick. Albert R. Beisel has been assigned as public counsel.

Setting of the pre-hearing conference date for American indicated that the show-cause proceedings against the "Big Four" will be held separately. United, Eastern and Trans-continental & Western Air have been served with similar orders.

Mississippi Case Oct. 1

The CAB's Mississippi Valley case (Docket 548 et al), involving additional air service in Kansas, Missouri, Arkansas, Louisiana, Mississippi, and neighboring states, has been tentatively set for hearing Oct. 1. Examiner Ferdinand D. Morgan announces in a pre-hearing conference report.

On top of their job

* * *

**VOKES FILTERS
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PLANES ON TOP
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As filtration specialists with years of laboratory research and practical engineering experience behind us, we candidly admit it is experience — actual experience under battle service conditions that has enabled us to produce the various Vokes Air, Oil and Fuel Filters now used on the many varied types of British, American and Allied aircraft and "kept them flying."

War has proved that efficient filtration is the necessity if mechanism is to give any useful life. Experience gained by prolonged service in battle areas where the appalling conditions caused by dust and dirt thrown up by passing tanks and aircraft taking-off proved such a terrible menace.

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Vokes Air, Oil and Fuel Filters have, when necessary, a standardised 99.9% filtration efficiency—and filtration efficiency you cannot buy on price — practical experience alone can produce it.

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TRANSPORT

Line Commerce

DEAR E. B.—

While you are in India or China or somewhere on the other side of the globe, we finally got one big problem settled: Has or has not there been a baby born in a plane?

Well, on April 3 of this year Jim Dodson, an Alaska bush pilot, who operates Dodson Airways out of Fairbanks, received an emergency maternity call. He flew to Nena, a village on the Tanana River and picked up Mrs. Hilbert Olsen of Berg, Alaska. The stork was too fast for the plane and won the race about ten minutes out of Fairbanks.

According to the Montreal Daily Star, Dodson attended the birth and piloted the plane at the same time. His new passenger was a six-pound girl, and both the baby and mother were reported doing fine.

But this isn't the first instance. Down in Mexico a few weeks ago I heard that Carlos Panini, who operates the Panini airline down there, had a similar experience some years ago. He was flying a prospective mother to Mexico City from Morelia and the plane didn't get there in time. Panini attended the birth, and the grateful mother named Panini the godfather. I missed Panini on this trip but hope to get the date and other details from him later.

The only other such instance, you will recall from our discussions some months ago, was on Northeast Airlines, but the baby was dead on birth and the incident, as a consequence, received no publicity.

There may be other instances—probably are. But at least we know now that it has happened at least twice.

W. W. P.



Austin

Traxel

H. T. Eckstrom, employment supervisor at Northwest Airlines' general offices in St. Paul, has been named personnel supervisor for the airline's Eastern region.

Frank Austin has been appointed supervisor of stations for Braniff Airways. Since 1937, he has been with Braniff in Amarillo, Tex., where he was station manager and DTM.

Louis A. Traxel has been appointed personnel director of American Airlines, succeeding Victor Vernon, who will become assistant to the vice president and general manager. Traxel has been personnel director of the Saginaw Steering Gear Division of General Motors.

Mid-Continent Airlines has announced centralization of its personnel and employment activities and appointed Carrel K. Ward as director of personnel. Ward, formerly transportation analyst in TWA's Economic Division, will supervise personnel procurement, industrial relations and personnel stabilization.

Pennsylvania-Central Airlines announces several promotions and transfers of traffic personnel: Harold Olsen, assistant to Vice President J. J. O'Donovan, to western divisional traffic manager; Wallace I. Gates from traffic manager at Buffalo to regional traffic manager at Pittsburgh; Thomas Hinman, assistant district traffic manager at Detroit to replace Gates in Buffalo; Fred R. Clemens, district traffic manager in Pittsburgh, to new post of Chicago regional traffic manager; V. K. Stephens, manager at Washington, district traffic manager for New York; C. M. Britt, Grand Rapids city traffic manager, to regional manager in the Central Michigan area; Morgan T. Bellah, Knoxville traffic representative, to district traffic manager at Knoxville; Marshall V. Butler, traffic representative in Baltimore, to district traffic manager in Baltimore.

Henry Cheattle, senior station agent at St. Louis for Chicago & Southern Air Lines, has been named station manager at Peoria, Ill.

W. D. Gay has become assistant treasurer finance of TWA. Gay's primary function will concern TWA's financial planning and programs.



Go Back to School—Despite their previous experience, all repatriated RCAF flyers who join Trans-Canada Air Lines have to take a stiff course in commercial airline procedure before they can qualify as TCA pilots. They spend 10 hours a day for six weeks in study and training. The photograph shows them receiving instruction on radio range flying.

Stratoliner Pilots Get Raise

Captains flying the improved Stratoliners for Transcontinental & Western Air have been granted a salary increase of \$80 a month above the rate paid in 1941, and co-pilots an additional \$20 monthly. The increases were agreed upon by a three-member board of arbitration. In 1941, before the Stratoliners went into military service, the average Stratoliner captain received \$306.33 a month.

No Depth Perception Tests

The CAB has modified Part 29 of the Civil Air Regulations, covering physical standards for private and student pilots, to eliminate depth perception tests. The CAA's Medical Division said the move was made primarily because of the difficulty in securing proper testing equipment, but that the change would remain permanent if it was found that depth perception tests were no longer required.

Wartime Technical Advances Reviewed

American Airlines' Kirchner Says Ten Years of Normal Development Have Been Telescoped Into Few Years

By SYDNEY CARTER

THE FACT that no new transport aircraft have been available to the commercial airlines since the outbreak of the war has made it difficult to evaluate just how great an effect wartime technical developments are going to have on the postwar commercial air transport. An overall evaluation of these technical advances was presented by Otto E. Kirchner, director of aircraft engineering, American Airlines, at a recent meeting of the Detroit Section, Society of Automotive Engineers.



Kirchner

Kirchner says that World War II has telescoped 10 years of normal aircraft technical development into a few years. What's more, he shows in his paper that these advances have ranged from a demonstration that increased wing loadings and increased landing speeds, as a consequence of increased gross weights for a particular type of plane, can be satisfactorily accepted when maneuverability and controllability characteristics are good, to the development of vinylite substitutes for interior wear surfaces that are superior to the linoleum and rubber previously used. A review of the developments he presents makes it apparent that there is no part of the plane down to the most minute item of equipment or furnishings that has not benefited significantly from wartime advances.

Great Strides in Ignition

While no new engine types other than the standard air-cooled radial have been used in any of the airline-assigned air transport equipment, increased demands on the ignition system for greater reliability of operation at high altitude and under extreme temperature conditions have resulted in great strides in the development of ignition wire, spark plugs and ignition shielding conduits. These same factors have produced reliable automatic carburetors and the realization that fuel systems must receive more engineering consideration. Still further forward strides have been made in such items as centrifugal fuel pumps, integral fuel tanks and synthetic rubber materials.

The petroleum industry likewise has made great strides, but from an operator's viewpoint, the most significant advance which will be of immediate postwar benefit has been the great expansion of facilities for producing aviation fuels of 91 octane and higher. So-called super fuel apparently will not be of economic interest to the air transport operators for some time, but cheaper fuels in the range of 91 and 100 octane, and perhaps one

grade higher, will be welcome since fuel and oil requirements account for more than 10 percent of an airline's total expense.

There have been numerous new developments in the field of instrumentation, Kirchner points out, many of which should prove of immeasurable benefit to the postwar commercial operator. Among these are the fully electric automatic pilot, the gyroscopically stabilized remote indicating magnetic compass, automatic air position indicators, gyro stabilized driftmeters, radio altimeters, true airspeed indicators, lighter and more rugged engine remote indicating instruments of the telemeter type and improved engine cylinder temperature measuring equipment.

Control Equipment Listed

Automatic control equipment designed to ease the load of the flight crew now in current use include engine turbo control, automatic horsepower or single lever control for aircraft engines, automatic cabin pressurization control, automatic temperature control equipment, and various miscellaneous controls for wing flaps, cowl flaps and oil cooler shutters. Instrument lighting has progressed tremendously with refinement of fluorescent lighting equipment and the extensive use of red light for night flying.

The development of 24 volt D.C. generating, control, distribution and utilization equipment has progressed much faster than would have been possible in peacetime due to the increased electrical load imposed upon military planes. Electrical application techniques have been revised, and now we have the general use of open wiring in place of previous designs incorporating metal conduit. This alone will do much to lighten postwar aircraft electrical systems, particularly as plastic rather than metal conduit will be used in those cases where mechanical protection is required.

While considerable progress has been made in reducing the weight of electrical accessory equipment, not all of the results have been favorable, and those which have been for the military will not necessarily be acceptable to commercial operators. This arises in part from the fact that while the general design of military equipment is for a limited service life of approximately 500 hours, the application of such equipment to airline use will in many cases require increased weight to provide the desired reliability and serviceability.

Under the heading of miscellaneous parts the war has accelerated the development of combustion heaters, cabin supercharging, electrically heated food and liquid containers and oxygen systems. It has fostered the design and use of such items as interchangeable hose end assemblies, synthetic rubber tires, lightweight brakes, swaged controls, high pressure hydraulic systems, hot air anti-

icing equipment and improved weight and balance control from the air transport point of view. Increased utility of airline-military planes as cargo carriers has stressed the need for improved type flooring, and many proposed designs for floor structures fabricated from newly developed materials will soon be available. A plastic type is being developed by one company; another is studying fiberglass sheet, and the rubber companies are entering rubber compounds as their bid. Seat development has resulted in substantial weight reductions.

Substitute materials have had a thorough test under wartime conditions, and while some have proved inferior many have proved reliable and in many cases have the advantage of decreased weight. Plastic, for example, is being used in propeller governor pulleys, inter-cylinder baffles, engine cylinder baffles and engine cylinder push rods. Superior vinylite substitutes have been developed to replace leather and linoleum as a wear surface.

From the standpoint of design improvements, Kirchner believes air transport cruising speeds can be assumed to range from 300 to 350 miles per hour in the immediate postwar period. During the next few years he expects to see intensive development of cabin air conditioning, including the complete use of the plane's system to cool in summer and heat in winter even while on the ground.

The possibilities of weight savings through the use of lighter materials developed during the war appear very promising. These would include light-weight fiberglass insulation, lighter weight seats, lighter weight fabrics of all kinds, the use of nylon in place of heavy cotton webbing and duck, and the use of numerous members of the plastic family in place of non-structural metal parts.

Both Natural and Synthetic

The postwar aircraft tire will utilize natural crude rubber in the cord body and synthetic rubber on the sidewalls and tread. The use of nylon in tires would be advantageous because of its better weight and strength characteristics. These characteristics also may lead to the wider application of nylon to high pressure hydraulic hoses.

Definite applications for postwar include hot air and electric de-icing and the probable eventual elimination of alcohol as a de-icing agent. Once the hot windshield, hot wing, etc. are developed along with possibly hot air or electrically de-iced propellers, the only application of alcohol will be for carburetor systems.

Better lightweight brakes of a disc type can be expected, particularly in the recent new disc design and the spot brake disc design which are superseding the shoe type brake and multiple metal disc brake, respectively.

Further weight savings will be accom-

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plished by greater application of magnesium in place of dural castings and possibly magnesium sheet for interior construction.

Increased cleanliness in the design of new aircraft, even though there may no longer be any arbitrary stall speed limitations, calls for a careful specification for an optimum flap. Reliability of the flap system, therefore, will be of prime importance. The handling qualities required under the new approach system will include among other things care in control surface balancing such as to provide the maximum ease and assurance to the pilot in making his low approaches.

In conclusion, the American Airlines engineer points out that the military forces have made rapid strides in the development of new methods of flight and aircraft propulsion, and while he states that he does not wish to try and forecast the future in regard to them at this time, he does point out certain trends.

The advantages of smoother operation and higher percentage cruising power with potential fuel economies offered by the liquid cooled engine cannot be entirely disregarded, and within three years there may be some liquid-cooled engine transport installations.

Until further developments are made

with reference to rotor de-icing and balancing, including further developments leading to less vibration characteristics, the helicopter must be considered purely supplemental and restricted to special uses. It is questionable whether it will be used by the airlines during the next five years. For scheduled air transport uses it cannot yet compete in performance and operating costs with our present transport aircraft.

Although, because of military secrecy restrictions, details of the present experimental status of the propeller-gas turbine-jet arrangement cannot be discussed, there has been sufficient technical information released on possible performance to indicate that within five years, practical installations in transport aircraft will be realized.

Rocket propulsion as a prime source of power for transport aircraft is still far in the distant future. It may show some economic benefits in supplementing the normal power of a very heavily loaded transoceanic cargo aircraft with rocket assist at take-off. Take-off and landing strips will in the near future reach economic maximum length. When this time arrives, consideration must then be given towards the use of supplemental agencies for take-off purposes.



Lightning Transport—Through the addition of the special wing tanks shown here, the Lockheed P-38 Lightning has now been transformed into an emergency troop and cargo transport. Although it's a bit crowded at times to judge from the lower photo, each tank can carry five men, and a plane can carry two tanks, one under each wing. Two thousand pounds of cargo can be substituted for the 10 men. The transport gondolas are used to rush ground crews and equipment to the scene following capture of an enemy airbase. They are manufactured by American Aero Supply Co., Los Angeles, and are similar in size and shape to the 300 gallon auxiliary drop tanks which carry fuel for long distance flights.



Brinkley Joins DPC

Floyd Brinkley, assistant to the director of Information and Statistics of the Civil Aeronautics Administration, has joined the public relations staff of Defense Plant Corp. to work on surplus aircraft disposal information.

Turner Gets Appointment

J. P. Riddle Company, Miami, Fla., announces the appointment of Benjamin W. Turner as secretary and legal counsel. Turner has been secretary of the Embry-Riddle Company for three years.

NORTHROP BLACK WIDOW

P-61 NIGHT FIGHTER



Photomicrograph
David T. Haw

**There's more to it
than meets the eye**

Here, published for the first time, is an "inside view" of Black Widow P-61 — largest and most powerful pursuit plane ever built.

Note the Northrop-designed retractable ailerons (shown raised on top of plane's wing), which make possible fast, tight turns, and leave the trailing edge free for full-span wing flaps; which permit both amazingly

quick climb and slow landing speed.

In Black Widow, the big pursuit, you see another example of how U.S. design keeps pace with battle needs. You see another important Northrop "first." And you see the promise of greater aviation advancement in the days to come. Northrop Aircraft, Inc., Northrop Field, Hawthorne, California.

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P-61 BLACK WIDOW Night Fighter

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New Equipment

Portable Rotating Beacon

An improved portable, mobile rotating beacon is now being manufactured by Davey Compressor Co., Kent, Ohio, for the U. S. Coast Guard. The beacon has a 24-inch face and is equipped with a variety of snap-on lenses, shutters and mountings which permit its use as a rotating or non-rotating airport beacon, searchlight, floodlight or range light. A new variable speed arrangement permits changing the rotating pattern or use in a fixed position. The beacon assembly is housed in the completely enclosed, thermal-insulated body of a 1½ ton truck which also affords space for an electric generating plant, complete auxiliary equipment, tools, spare parts and living quarters for a two-man crew. The beacon itself can be removed quickly and mounted on a tripod for field use.



Fuse for Aircraft Systems

A new fuse developed by General Electric Co., Schenectady, N. Y., for aircraft electrical systems was described in an AIEE spring program paper by A. H. Powell of the company's switchgear division. It has a pure silver wire element which is supported from two molded end pieces in the center of a Pyrex glass tube and surrounded by a special filler of granular quartz. Three such units comprise the fuse, providing a three-pole assembly. The new fuse is said to meet the requirements of adequate interrupting capacity, extremely short arcing time, vibration and shock resistance, high altitude and wide range temperature operation, small size and light weight. Because the phases are in separate isolated compartments, phase-to-phase short circuits within the device are prevented during interruption.

Kidde Oxygen Compressor

A new oxygen compressor developed by Walter Kidde & Co., Belleville, N. J., is said to greatly speed the recharging of aviation oxygen cylinders. Electrically or gas-engine driven, the new machine permits recharging of more cylinders, and at a faster rate than previous models. The unit is portable and its use need not be limited to well-equipped airfields or bases. The compressor and driving



motor are mounted on a welded steel base. Each compression chamber is machined from a solid bronze rod and is provided with poppet type intake and disc type outlet valves. The compression chambers can be removed to clean the valves or change the packing without disturbing any other part of the unit. A frangible type safety disc which will burst at between 2,500 and 3,000 lbs. p.s.i. prevents the building up of excessive pressures.

Midget Coil Winder

Toroidal coils of one half inch diameter, said to be the most minute coil of its kind ever attempted in this country, are now being wound on a special machine by the G. M. Giannini Co., Pasadena, Calif. for use in remote indicating compasses. The operation of the machine on which the coils are wound is controlled under a microscope. It will be used in the production of other Autoflight aircraft instruments.

High Sensitivity Resistor

A new line of Autoflight high sensitivity resistors has been announced by G. M. Giannini & Co., 161 E. California St., Pasadena, Calif. With overall dimensions of only 1¼ x 1 1/16 inches, they produce a variable electric resistance from a low torque rotational movement and can be connected directly to sensitive low torque apparatus such as flight test recording instruments to operate relays or recording systems without the use of amplifiers. The new Autoflight resistors require but 3 gram millimeters input torque to overcome friction due to their jewel supported shafts. They are obtainable in various types from 100 to 1500 ohms, and from 4 to 15 watts.



Micro-set Stop Countersink

A new micro-set stop countersink with a large bell skirt has been announced by Aircraft Tools, Inc., 750 E. Gage Ave., Los Angeles 1, Calif. Designated as AT-400-B, the new tool is compact, lightweight and precision made from high speed tool steel. It has positive micrometer adjustment and the bell skirt gives added base support for better tool alignment and greater chip clearance. A spring retracts the drive shaft for cutter protection. The new countersink takes up to ½ inch cutters. All parts are interchangeable and replaceable and available from stock.

New Production Technique

A new production service technique for the rapid and accurate machining of aluminum and magnesium has been developed by Aircraft Products Manufacturing Corp., Des Plaines, Ill., utilizing special machines built by the Hack Machine Co. On aluminum and magnesium parts, a sequence of operations such as surfacing, boring, milling and drilling can be carried out at one setting without disturbing the piece or holding fixture.

Quick-Acting Cable Clamp

Patent rights in a new all purpose quick-acting cable clamp recently granted to James J. Pasela and L. Stanley Knockel, machine shop employees, have been assigned to the Glenn L. Martin Co., Baltimore 3, Md. The clamp, which can be used to measure the load of any cable while avoiding damage at the crimped point and a consequent false breaking point, features a dual pulley whose diameter is such that tension

on the cable is relieved and the clamp bears only a small part of the strain. An automatic locking bolt consisting of a screw mechanism with two cross slots so arranged that the pull of the cable urges the locking bolts into a firm clamping position at the end of the cable replaces 12 hand adjusted bolts found in previous types of cable clamps. With the new device it is claimed that only two or three minutes instead of the half-hour previously required are needed to adjust a cable for test purposes.

Bendix Hydraulic Equipment

Pacific Division, Bendix Aviation Corp., North Hollywood, Calif., has announced a complete new line of equipment for 1,500 psi hydraulic systems. Twenty units are in production or to be available shortly include 5, 7½, and 10 inch pressure accumulators, five sizes of check valves, actuating cylinders, electric operated 4-way selector valve, flow equalizer, hand pump, power brake valve, pressure regulator, one-way and two-way restrictor valves, sequence valve, and ½ and ¾ inch T.B. 4-way selector valve. All units incorporate the same basic principles of design and construction used in Pacific Division's 1,500 psi equipment.

Paddle-Bladed Aeroprop

A paddle-bladed Aeroprop of 12 ft. 7 in. diameter, shown here harnessed to a Pratt & Whitney R-2800-C engine, is now being produced by Aeroprop Division, General Motors Corp., Dayton, Ohio, for the Army and Navy. The activity factor of the new blade is said to be 40 percent greater than previous models while weight has been increased by only 15 percent. The blades are of hollow, ribbed-steel construction.



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If you could look inside the cramped quarters of a navigator on a U.S. bomber or transport plane these days, you'd notice that the name "WEEMS" was prominent on the navigation instruments and in the books used as navigational aids in flight. No wonder, for "Weems" instruments are standard in the U.S. Army Air Force, as well as in the Royal Canadian Air Force and the British Royal Air Force. In addition to the navigational instruments and texts Weems offers home study courses and classroom instruction in air navigation; in principal cities. Weems' texts and instruments may be purchased at the nearest aviation or marine supply house, or book store. If they cannot supply you, write to Weems System of Navigation, Dept. AA-5, Annapolis, Maryland.

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MANUFACTURING

Electronic Control Stick Developed by Minneapolis Concern

A revolutionary electronic control stick which permits the pilot to control a heavy bomber with less effort than a child uses in turning his bicycle has just been revealed by the Air Technical Service Command and the Minneapolis-Honeywell Regulator Co., which developed the new device.

Known as a "formation stick," the new control was designed for use on heavy four-engined bombers, but will undoubtedly be employed on postwar commercial transports since it increases controllability and maneuverability and permits pilots to fly their planes with an ease and accuracy hitherto unattainable even in the smallest craft.

The actual control is a pistol-gripped lever about ten inches long mounted with an arm rest beside the pilot. It is free to move in all directions in exactly the same manner as the joy stick of a fighter. Through electronic amplification and the servo motors of the control surfaces, it moves the plane in the same direction and in the same proportion as the stick itself is moved.

In effect, what the new control does is to utilize the electronic system and servo motors of the Autopilot as a power boost control system, which, however, is completely independent of the plane's direct control system. A stabilizing mechanism has been added to give the stick "feel" and prevent the inadvertent application of abrupt control.

The "formation stick" can be used to fly the plane at all times, including during landing and take-off operations if desired. Further, it combines the advantages of easy pilot control with those of the Autopilot so that when the pilot pulls back on the control, he can release it completely if he wishes, and the plane will continue to climb at exactly the same degree and direction until he moves the stick to some other position. Yet, since the new device is entirely electronic, it can be overridden at any time by the plane's regular control system, and there is no danger of it getting out of order and locking the controls as with some other types of automatic pilots.

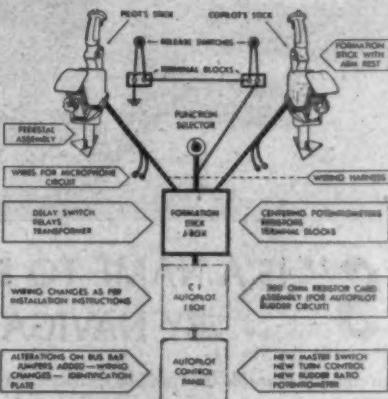
In war use, the new instrument has not only greatly reduced pilot fatigue, and through its ease of operation, simplified the task of evasive action, but it has also made possible tighter formation flying and permitted an entire flight of aircraft to turn as a unit with greater flying ease.

In postwar commercial flying it is expected to provide in a large degree the ease of control and maneuverability that will become essential with increased stalling speeds, and may well supply the answer to the problem of whether or not power boost controls will be needed on some of the super airliners now under construction or on the drawing boards.

Wartime needs for the "formation stick" are so great, according to Minneapolis-Honeywell, that complete engineering and manufacturing data has been turned over to Jack & Heintz Co., which is also in production on the new device.



One-Hand Control—The new "formation stick" is here shown installed in the pilot's compartment of a B-24 Liberator. The Liberator was the first plane to be equipped with the new Minneapolis-Honeywell developed system which operates in connection with the Autopilot and, in effect, converts it into a power boost control system.



How It Works—This is a schematic drawing of the Minneapolis-Honeywell "formation stick" control system. Used now only on heavy bombers, it is also expected to play an important role in simplifying control and reducing pilot fatigue on big postwar transport planes.

AMEX Signs Contract For Giant Landplanes

American Export Airlines announces the signing of a contract with one of the nation's leading aircraft manufacturers for a fleet of giant multi-engine landplanes accommodating 108-125 passengers. The model has been temporarily designated "AE Model VII." All specifications including range, speed, dimensions and the name of the manufacturer are being withheld for reasons of military security.

The "AE Model VII" conforms closely, however, to the size and type of a four-engine landplane referred to by AMEX in 1943. This plane was described as having a range in excess of 4000 miles and a cruising speed in excess of 200 mph.

Bell Consolidation Centralizes Most Of Niagara Division

Bell Aircraft Corp., in accordance with plans which have been under consideration for several months, has started to consolidate the major part of its Niagara Frontier Division facilities in its Niagara Falls Assembly Plant. All operations of the Bell experimental plant at 2405 Main St., Buffalo, where the P-59A Airacomet was secretly developed, and a substantial number of the operations at the Elmwood Ave. manufacturing plant, where the corporation started its aircraft development in 1935, are involved in the transfer.

The Main St. move is expected to require approximately 45 days, while additional construction of new facilities and installations at the Falls plant needed to accommodate the Elmwood Ave. plant operations involved at present will require from five to seven months.

Consolidation of a major portion of the division facilities is expected to result in greatly increased economy of operation, Bell officials stated. The advantages have been apparent for some time, but the move was precluded by the necessity of meeting production schedules, and it was not until recently that arrangements for the transfer could be made and the move effected without interference to vital war production.

Moving of the facilities will require approximately 5-6,000 employees now working in Buffalo to transfer to the Falls plant by next autumn. Bell officials emphasized, however, that numerous operations and considerable warehousing will be continued at the Elmwood plant for the remainder of 1945 and probably well into 1946, depending on the course of the war.

B-17 Production Schedule Cut Equivalent To 50% Cutback Over 60-Day Period

REDUCTION in B-17 production schedules which will amount to a 50% cutback over a 60-day period and continuation at reduced rate after that period were announced today by both Douglas Aircraft Co. and Lockheed Aircraft Corp. It was reported by American Aviation's west coast representative that all other Douglas schedules remain the same and that the voluntary current termination rate of from 450 to 500 workers per month at Douglas' Long Beach plant might obviate any reduction in this plant because of the cutback on B-17 schedules.

Robert E. Gross, president of Lockheed, told employees that revised schedules would make no change in production rates for three major Lockheed planes—the P-38 Shooting Star, Constellation and Navy PV Medium Bomber. In addition to the reduced B-17 production schedules, Gross said the P-38 Lightning will be produced throughout 1945, with a tapering off of production schedules on this model scheduled for the end of next April.

Gross further stated that reductions in Lockheed's working force made necessary through these changes can be accomplished largely by eliminating hiring of

new personnel and by replacing relatively few who leave voluntarily.

Although industry comments generally on these cut backs were cautious as to future reductions, no mass lay-offs are expected by west coast aircraft executives in the near future. Several industry leaders expressed satisfaction over termination methods which avoided abrupt cancellations in contrast to some procedures previously used. Government announcement of the extent of the cut backs covering some future period has enabled industry to taper off production with proper adjustments.

'Governor Requirements' Discussed In AIEE Paper

The results of an analytical study of performance specifications for governors for variable-ratio transmissions in aircraft are presented by W. K. Boice and L. G. Levoy, Jr. in a paper listed on the spring program of the American Institute of Electrical Engineers. The title of the paper is "Governor Requirements for Aircraft Alternator Drives".

A second paper by G. O. Schwandt of General Electric's Fractional Horsepower Motor Engineering Division presents some of the problems solved in developing high-frequency 400-cycle electric motors for aircraft and their application.

Rowland 1st Vice President Of Glenn L. Martin Co.

Harry T. Rowland has been elected first vice president of The Glenn L. Martin Co., Baltimore, Md. Glenn L. Martin has been re-elected president of the company and named to the new post of chairman of the board of The Glenn L. Martin-

Nebraska Co., a wholly owned subsidiary. Joseph T. Hartson continues as president of Martin - Nebraska. All Martin directors have been re-elected.

New officers of the Glenn L. Martin Co. in addition to Martin and Rowland are:

Harry F. Vollmer, second vice presi-

dent; William K. Ebel, third vice president; Joseph T. Hartson, fourth vice president; Thomas H. Jones, secretary; Myron G. Shook, treasurer; Morgan R. Schermerhorn, controller; W. L. Lucas and W. L. Ruttig, assistant secretaries and treasurers; John E. Soenke, assistant secretary, and E. R. Uhlig and W. F. Palmer, assistant controllers.

Other officers named by The Glenn L. Martin-Nebraska Co. are: G. T. Willey, first vice president; H. F. Vollmer, second vice president; W. K. Ebel, third vice president; H. T. Rowland, fourth vice president; T. H. Jones, secretary; C. S. Miller, treasurer; J. V. Langley, controller; G. L. Barnett, assistant secretary and assistant general manager; S. S. Gregory, assistant secretary and chief accountant; M. G. Shook, assistant secretary and assistant treasurer; J. E. Soenke, assistant secretary; and M. R. Schermerhorn, assistant controller.



Rowland



Giving Contract Once-over

These officials of Ryan Aeronautical Co. are shown inspecting Ryan's new \$45,000,000 Navy contract, which virtually doubles the number of fighting planes to be manufactured by the company for the Navy. Left to right—R. A. Gillies, vice president; T. Claude Ryan, president; and Walter O. Lock, contract administrator.

'Airhopper' Test Flown

The Airhopper, a single place, low wing monoplane, has been test flown at Commonwealth Aircraft, Inc., Kansas City, Mo. The new ship was designed by George Stark, Commonwealth project engineer, and Melvin Salvay, an engineer with North American Aviation, Inc. Pilots who flew the ship said it was very stable both in the air and on the ground, and had a good rate of climb. Cruising speed is estimated at 105 mph. Final tests will be made shortly.

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Manufacturing Personnel



Brodie

Freitag



Benton

Swift

Charles C. Layman, formerly vice-president and sales manager, has been elected president and general manager of **Aeronautical Products, Inc.**, Detroit, succeeding the late founder of the company, Alfred Jackson, who was killed last month in a plane crash. M. J. Whitfield, previously secretary, was promoted to executive vice president, and **Byron Layman**, treasurer, was named secretary-treasurer.

Ira W. Pike, works manager of Aircraft Mechanics, Inc., Colorado Springs, Colo., has been elected to the board of directors of the company.

Kenneth MacGrath, previously general manager of the Eclipse-Pioneer division of **Bendix Aviation Corp.**, has been elected executive vice president and a director of **Alr Associates, Inc.**, Teeterboro, N. J.

R. S. Benton, formerly chief of industrial relations at the **Elizabeth City Division** of **Consolidated Vultee Aircraft Corp.**, has been named chief of industrial relations for **Convair's Miami division**, succeeding **E. W. Baker**, resigned.

Capt. Edmond Kelly has returned to the presidency of **Aviation Equipment Sales Corp.** after three years in the **Army Air Forces**.

William J. Turnbull, formerly project business manager for the B-26 and manager of special projects at the **Glenn L. Martin Co.**, has been appointed assistant director of procurement. **Peyton Magruder** succeeds him as manager of special projects.

C. W. "Slim" Freitag has been appointed to the post of regional representative on the sales staff of **Consolidated Vultee Aircraft Corp.** and will be stationed at the **Stinson division**, Wayne, Mich. He was formerly associated with **Howard Aircraft Corp.** as sales manager and vice president, and has more recently operated as an aviation consultant in Chicago.

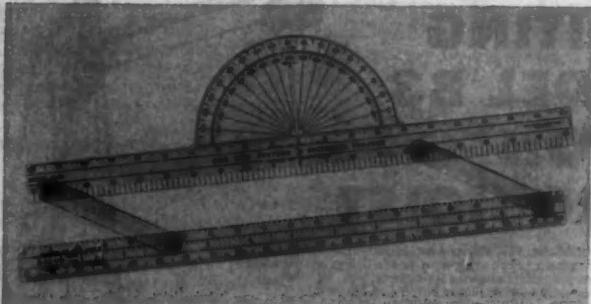
Carl E. Swift, sales manager of **Pacific Engineering Corp.**, will direct the company's sales program from new offices at 1100 Equitable Bldg., Hollywood and Vine Sta., Hollywood, Calif.

W. E. Brainard, formerly tool planning supervisor, has succeeded **Dwight C. Jones**, resigned, as chief tool engineer of the **Vultee Field division** of **Consolidated Vultee Aircraft Corp.**

G. H. Brodie has been appointed assistant to the president of **Packard Motor Car Co.** in charge of special design projects, and will coordinate the efforts of engineering, manufacturing, sales, and management in special engine programs including aircraft. He is at present manager of the company's marine engine division.

Roy B. Buckley, for the last year vice-president and general manager, has been appointed executive vice-president of **Timm Aircraft Corp.**, Van Nuys, Calif. He will continue as general manager. **Den F. Murdy** who joined the company a year ago as treasurer has been named a vice-president, and **Hyman Smith**, legal counsellor, has been elected secretary while continuing his former duties.

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American Airlines Pfd.				
Called 1-15-45 at 106				
American Export Airlines	40	41 1/2	41 1/2	42 1/2
Braniff	12 1/2*	—	19*	—
Chicago & Southern com.	15 1/2	16 1/2	15 1/2	15 1/2
Chicago & Southern wts.	7 1/2	8	7 1/2	8
Continental Airlines	12	13 1/2	13 1/2	13 1/2
Delta Air	25 1/2	26	26	26 1/2
Inland Airways	4	4 1/2	4	4 1/2
Mid-Continent	9 1/2	9 1/2	9 1/2	9 1/2
National Airlines	17 1/2*	—	17 1/2*	—
Northeast Airlines	12 1/2*	—	12*	—

MANUFACTURERS

Aeronca	4 1/2	5 1/2	5	5 1/2
Air Associates	15 1/2*	—	12 1/2	12 1/2
Aircraft & Diesel	1 1/2	2	1 1/2	2 1/2
Airspeed Mfg.	10 1/2	11	10 1/2	11
Airplane & Marine	6 1/2	6 1/2	6 1/2	7 1/2
Airplane Mfg. & Supply	4 1/2	4 1/2	4 1/2	4 1/2
Central Airports	2 1/2	—	2 1/2	—
Columbia Aircraft	5 1/2	—	5 1/2	1
Continental Aviation	3 1/2	4 1/2	3 1/2	4 1/2
Delaware Aircraft pfd.				
General Aviation Equipment	1 1/2	1 1/2	1 1/2	1 1/2
Globe Aircraft	1 1/2	2 1/2	1 1/2	2 1/2
Harrill Corp. com.	2	2 1/2	2 1/2	2 1/2
Interstate Aircraft & Engine	11 1/2	12	12	12 1/2
Jacobs Aircraft	5 1/2*	—	5 1/2*	—
Kellett Aircraft	1 1/2	2 1/2	1 1/2	2
Kinner Motors	1 1/2	1 1/2	1 1/2	1 1/2
Liberty Aircraft	13 1/2	13 1/2	13 1/2	14
Luscombe	1 1/2	1 1/2	1 1/2	2
Menasco Mfg.	1 1/2	1 1/2	1 1/2	1 1/2
Northrop Aircraft com.	7 1/2*	—	7 1/2	—
Piper Aircraft com.	3 1/2	4	3 1/2	4
Piper Aircraft pfd.	36 1/2	—	36 1/2	—
Pitts Aviation Inc.				
Final liquidation 76c at Farmers National Bank				
Bair Aircraft	10 1/2	10 1/2	10 1/2	10 1/2
Bair Aircraft Prods.	3 1/2	3 1/2	3 1/2	3 1/2
Taylorcraft com.	2 1/2	3 1/2	2 1/2	3 1/2
Taylorcraft pfd.	7 1/2	8 1/2	7 1/2	8 1/2
Timm	85c	95c	85c	95c
United Aircraft Prods. Pfd.	18 1/2	19 1/2	19	19 1/2
Varlow Aircraft	3 1/2	3 1/2	3 1/2	3 1/2

*Sale.

Enyart Reelected Chairman, President of NAA; 1-Year

Term Becomes Tradition

The National Aeronautic Association board has re-elected William R. Enyart of Greenwich, Conn., president of Simmonds Aerocessories, as president. Enyart was also named chairman of the board. Arthur I. Boraean, Des Moines, Iowa, first vice president, Sheldon B. Steers, Lansing, Mich., second vice president, Mrs. Nancy Harkness Love, secretary, and William P. Redding, treasurer. By common consent at the request of Enyart, it was agreed to establish a tradition of one-year terms for president, with the first and second vice presidents succeeding to the top position and the president succeeding to the chairmanship of the board.

The board approved a proposal for the establishment of solo flight scholarships for boys and girls between the ages of 16 and 18 inclusive for meritorious work in model aviation and pre-flight activity. It directed that a committee be formed to work out details of the scholarships. A change in the NAA by-laws provides for the future election of national coun-

cillors by chapters in the states, rather than the previous method of appointment by the board of directors. Another change creates six divisions, each headed by a vice president, to develop particular phases of aviation in which NAA is interested. Each division will set up an advisory staff which will formulate plans for the division to submit to the board.

The divisions and their vice presidents are: Private Flying, William B. Stout, Dearborn, Mich.; Air Defense, Richard C. Palmer, Washington, D. C.; Airports, Robt. C. Oertel, New York City; Air Safety, Jerome Lederer, New York City; Air Transport, Glen B. Eastburn, Los Angeles; Air Youth, Dr. E. K. Fretwell, New York City.

Nathan Succeeds Gen. Clay

Robert Nathan has been named Deputy Director of the Office of War Mobilization and Reconversion. One time adviser to War Production Board Chairman Donald Nelson, Nathan will occupy the post formerly held by Major General Lucius D. Clay. Clay last fortnight was nominated by President Truman for promotion to the temporary rank of Lieutenant General.

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Financial Reports

TWA Reports Record Earnings

Record net earnings for 1944 of \$2,752,960, after deducting taxes, are reported by Trans-continental & Western Air, Inc. The earnings represent a gain of 34 per cent over 1943, and are equal to \$2.82 a share of capital stock.

The airline's operating revenue reached an all-time high of \$25,340,735, or about 32 percent greater than in the preceding year. The gain was made possible by the operation of an enlarged fleet of airliners as a result of additional equipment released by the Army and the increased utilization of planes.

Of the total operating revenue, 60.4 percent was from passenger traffic, 22.3 percent from mail, 6.4 percent from express and 1.9 percent miscellaneous.

"Total operating expenses in 1944 of \$20,569,472 were 30 percent greater than in 1943," said President Jack Fye. "TWA continued the policy in 1944 of transferring all net earnings to surplus in order to supply additional capital for the company's expanding operations."

Overseas flying by the TWA Intercontinental Division under contract to ATC reached its greatest peak in 1944, with an average of more than eight trans-oceanic flights daily. Approximately 60,000 passengers and 11,500,000 pounds of mail and high priority cargo were carried in four-engine aircraft.

PCA Nets \$404,635

Pennsylvania-Central Airlines reports an increase of 71% in revenue miles over 1943 with passenger revenue miles jumping 72% or nearly 38,000,000 more. During 1944, PCA transported 433,584 passengers, an increase of 77% over the total of 244,951 in 1943. Mail loads increased by about 1,000,000 pounds while express loads were up 500,000 pounds.

Total revenue in 1944 was \$6,217,000 compared with \$3,913,000 the previous year. Net profit was \$404,635 compared with \$279,733 and assets increased from \$5,037,000 to \$5,905,000. Current assets are 2.5 times current liabilities with cash and U. S. securities totaling \$2,765,000. At the same time the company retired its \$1.25 convertible preferred stock issue.

Western Nets \$135,827

Western Air Lines reports a net profit of \$135,827 for 1944 after all taxes and charges, including provision of \$321,321 for depreciation and \$165,876 for estimated federal income taxes. The 1944 figures reflected seven months' operations of Inland Air Lines, a subsidiary, and compared with a net profit of \$90,194 in 1943 after provision of \$203,336 for depreciation and \$48,087 for federal income taxes.

Western's 1944 gross revenues totaled \$4,257,634, compared with \$3,155,211 in 1943, an increase of 37.55%. Passenger revenue, which contributed 74.43% of the total, amounted to \$3,168,828 as against \$1,709,402 in 1943, an increase of 85.38%. Mail revenue amounted to \$136,556 in 1944, compared with \$80,906 in 1943. Of the 1944 total, \$318,297 was received by Inland.

Operating expenses rose from \$2,073,105 in 1943, to \$2,022,949 in 1944. This increase was accounted for in expansions in facilities and services, together with a rising trend in wages and costs of materials, personnel training and turnover. The consolidated balance sheet showed current assets of \$1,827,911, including cash of \$398,762, as against current liabilities of \$1,145,823, as of Dec. 31, 1944. This compared with current assets of \$1,767,264, including cash of \$342,257, as against current liabilities of \$1,027,887 as of Dec. 31, 1943.

The annual report to stockholders showed that Western received five DC-3s through purchase from the Army during 1944 at a cost of \$260,378. An additional amount of \$204,897

was expended for overhaul and conversion. The company showed 147,854 passengers carried and 63,073,101 revenue miles flown in 1944, compared with 80,907 passengers carried and 32,580,240 miles flown in 1943.

Trans-Canada Surplus \$7,409

Trans-Canada Air Lines of Montreal reports an operating surplus of \$7,409 in 1944, compared with \$147,889 in 1943. The lower operating surplus in 1944 was accounted for in a 12% increase in operating expenses, brought about by additional traffic and service costs, increased cost of labor and materials, a major program of aircraft and flight equipment overhaul and development expenditures in preparation for expanding operations.

Operating revenues in 1944 totaled \$10,314,941, an increase of \$935,440 or 10% over 1943. Passenger revenues increased \$245,168 or 6%; mail revenues increased \$286,588 or 8%; express revenues decreased \$3,548 or 1%; revenues from incidental services increased \$419,331 or 23%. Mail pay for 1944 was 42.0¢ per plane mile flown, compared with 42.9¢ in 1943.

Revenue passengers carried in 1944, apart from the Atlantic service, were 156,884, compared with 140,276 in 1943. Passenger revenue per revenue passenger was \$28.41 and per passenger revenue mile \$5.26c, compared with \$30.04 and 5.37c respectively in 1943.

The consolidated balance sheet as of Dec. 31, 1944, showed total assets of \$8,818,183. This item included current assets of \$3,488,784, deferred charges of \$39,884, insurance fund \$881,788, investments \$751,623, and capital assets of \$6,861,488, less accrued depreciation of \$3,025,594. Current liabilities were listed at \$1,626,472 reserves at \$1,099,796, capital stock at \$4,000,000, and surplus (including 1944), \$1,491,913.

Under total gross revenue of \$10,314,941, the company showed passenger revenue of \$4,456,767, mail of \$3,502,396, express, \$226,236; excess baggage \$50,279; incidental services \$1,678,262. Under the \$10,070,807 operating expenses, these items were listed: aircraft operation, maintenance and depreciation, \$5,213,447; ground operation, maintenance and depreciation, \$2,872,546; incidental services, \$1,122,419; traffic and general administrative, \$813,541; tax accruals, \$48,852.

The company reported the following statistical data (parenthetical figures are comparable 1943 figures): Route mileage operated, 539,000 (490,52); revenue plane miles flown, 9,110,474 (8,254,819); plane miles flown with mail, 9,046,866 (8,194,962); non-revenue plane miles flown, 924,331 (706,967); revenue passengers carried, 156,884 (140,276); percentage of passenger occupancy, 84 (83); pounds of air mail carried, 2,739,105 (3,726,607); pounds of express carried, 856,016 (821,606); pounds of excess baggage carried, 281,731 (292,600).

Jacobs Nets Million

Net earnings of Jacobs Aircraft Engine Co. for the year ended Dec. 31, 1944, after all taxes and after federal excess postwar credit, but before reconversion, amounted to \$1,047,793, equal to \$1.69 a share on the 618,546 capital shares outstanding. This compares with an adjusted earnings figure of \$1,070,518 or \$1.73 a share in 1943, after giving effect to final renegotiation. The net earnings for 1944, after all taxes and before renegotiation, represent a profit of 2% on the company's sales.

Fairchild Sales \$93,000,000

Fairchild Engine and Airplane Corp. reports total dollar volume of business for 1944 amounted to \$93,212,963 compared with \$162,564 in 1943.

Consolidated net income for 1944 amounted to \$1,173,123 after \$5,011,366 of Federal taxes less post-war refunds. This compares with

\$1,827,211 in 1943 and represents 1.2% of sales compared with 1.8% in 1943. Consolidated net income was \$1.12 per share in 1944 compared with \$1.75 for the previous year.

Federal income and excess profits taxes for 1944 amounted to \$5,538,879.62, nearly five times net income. Net income is after a provision of \$300,000 for contingencies, and also reflects a provision of \$527,514 for the cost of adjusting operations to peacetime conditions, credited to a reserve for readjustment to a post-war basis. The total of this reserve at December 31, 1944 was \$3,000,122.

With respect to present activities of the operating divisions of the Corporation, J. Carleton Ward, president, indicated that the aircraft division is now concentrating on the initial production of the C-82 Packet.

He said that by the end of 1945 Fairchild's production of the C-82 should reach about two-thirds of the scheduled capacity of its Hagerstown, Md., facilities.

Ranger Aircraft Engines Division is producing Andover auxiliary power plants for the B-29, Marlin 5 rocket motors, and parts for others. Duramold Division is producing airplane fuel tanks of large capacity, and various types of radar housings.

Consolidated unfilled orders as at Dec. 31, 1944 amounted to approximately \$33,000,000 as compared with about \$269,000,000 at Dec. 31, 1943. At March 31, 1945 such unfilled orders amounted to approximately \$106,000,000 which includes an additional quantity of C-82 planes recently ordered by the Army.

The 1944 consolidated balance sheet showed total current assets of \$26,657,890, as against total current liabilities of \$22,755,172; investments and other assets, \$1,519,983; fixed assets—basic plants at cost, \$1,630,111, less reserves for depreciation and amortization of \$1,310,918; plant facilities contracts with the U. S. Government, \$1,665,399; deferred charges, \$233,979; notes and accounts payable, \$1,616,569; reserves, \$3,849,122; capital and surplus, \$4,507,233.

Minneapolis-Honeywell Sales Record

Minneapolis-Honeywell Regulator Co. has announced 1944 sales of \$89,306,433, largest volume in the company's history. Earnings were \$3,239,676 after provision of \$11,023,148 for income taxes, and \$425,000 for wartime contingencies. This figure includes an estimated \$916,200 in postwar refunds of 1944 Federal excess profits taxes. Net income was \$2,908,223 after provision of the \$425,000 for contingencies and a charge of \$319,905 on account of final renegotiation settlements for 1942. This income was equivalent, after preferred stock dividends of \$305,383, to \$2.36 a share on the present 1,234,800 shares of common stock as against a 1943 figure of \$2.15 a share adjusted to present capitalization. Aeronautical products included electronic autopilots and electronic turbo supercharger regulators and new electronic controls recently adopted by the Army Air Forces.

Thompson Products Nets \$816,925

Net sales to customers of all companies of Thompson Products, Inc., amounted to \$123,256,120 in 1944, of which \$32,228,168 was by Thompson Aircraft Products Co. In 1943 the respective figures were \$133,153,246 and \$33,328,824. Net profit for the year of Thompson Aircraft Products Co. was \$816,925, or \$2.1 per share on 399,737 shares of common stock outstanding, as against a 1943 figure of \$466,894, or \$1.55 a share on 299,737 shares then outstanding. Working capital of Thompson Aircraft Products Co. at the end of the year amounted to \$2,190,739, an increase of \$1,201,060 during the year. Earned surplus of Thompson Aircraft Products Co. increased \$816,925. New products put into production during the year included jet propulsion and supercharger components.

Ryan 15c Dividend
Directors of Ryan Aeronautical Company at regular meeting March 2, declared special dividend of 15c per share, payable April 20 to stockholders of record as of March 20.

Noorduyn Earnings \$34,456

Noorduyn Aviation, Ltd., Montreal, reports net earnings, excluding the refundable portion of the excess profits tax, of \$34,466 for 1944, equal to 35.8c per common share, as against \$20,179 or 21.6c per share in 1943. Including the refundable portion of the excess profits tax, total earnings for 1944 were \$222,586 or \$2.38 per share as against \$142,179 or \$1.52 per share the previous year. Working capital at the end of 1944 amounted to \$383,474 as compared with \$335,455 at the end of 1943. Final renegotiation with the Government for operations up to Dec. 31, 1943 has resulted in a refund of \$460,000 to the Government, and an addition of \$24,433 to the earned surplus of prior years. There was also a \$72,600 increase in the refundable portion of the excess profits tax for the same period.

Lockheed Pays 50c Dividend

Lockheed Aircraft Corp. on March 28 paid an interim dividend of 50c per share to stockholders of record March 15. President Robert E. Gross stated it is the company's policy to declare dividends from time to time as conditions warrant without establishing a schedule for regular payments.

Studebaker Nets 4 Million

The Studebaker Corporation and its subsidiaries in the year ended December 31, 1944, earned a consolidated net profit of \$4,038,116 after provision of \$1,500,000 for contingencies and after all charges, including depreciation, interest on bank loans, commitment fee under V-1 loan credit agreement, additional compensation expense and provision for federal income and excess profits taxes. This is equivalent to \$1.74 a share on 2,324,477 shares of common stock outstanding at the end of the year. It compares with a net profit carried to earned surplus in 1943 of \$2,835,426, equivalent to \$1.23 per share on the 2,305,481 shares of common stock outstanding at the end of that year. An adjustment in the reserve for federal income and excess profits taxes for 1943 through application of Section 121 of the Revenue Act of 1943 resulted in the transfer of \$885,000 to earned surplus in 1944.

Goodrich Nets 12 Million

Consolidated net income of the B. F. Goodrich Company for 1944 was \$12,015,842, after provision of \$351,163,000 for estimated federal and foreign income and excess profits taxes (less postwar credits), and estimated renegotiation of war contract prices and after providing a reserve of \$3,500,000 for contingencies. Net income in 1943 was \$11,584,501. Earnings for 1944 were equivalent, after deducting the regular \$5 dividend on preferred stock, to \$7.64 a common share, compared with \$7.31 a share in 1943. The number of common shares outstanding in both years was 1,360,253. Renegotiation of war contract prices for 1943 was completed, the report said, and reserves provided in the accounts for that year were sufficient to absorb its effect. Renegotiation for 1944 has not been completed, it was stated, but provisions believed to be adequate are made in the accounts for all known or contingent liabilities. Consolidated net sales for 1944 amounted to \$419,294,119, compared with \$374,408,710 in 1943, an increase of 12 per cent. The production from government-owned plants operated by the company is not included in sales for either year, it was pointed out.

United Aircraft Products Gains

United Aircraft Products, Inc., Dayton, O., earned net income of \$883,536, or \$3.34 a common share, in the fiscal year ended Nov. 30, 1944. This compares with adjusted net income of \$590,530, or \$2.17 a share, in the

566 Primary Training Planes Sold in 9 Days, RFC Reports

Included Among 3,000 Trainers Up for Sale; Bring \$1,100 Average

FIVE HUNDRED and sixty-six of the 3,000 surplus primary training planes placed on sale throughout the country by the Reconstruction Finance Corporation beginning April 6, were sold in the first nine days they were offered to the public, the RFC announced April 19.

Priced at from \$375 to \$2400, the planes brought an average of approximately \$1100 each, and returned a total of \$617,840 to the Government.

Of the total of 294 planes sold the first day, centers at Alexandria, Va., and Pittsburgh, Pa., each sold 17 on April 6. Alexandria is now leading all centers with a total of 34 sales for the nine days, April 6 through April 14. Twenty-six sales centers, excluding Alexandria, have reported sales of from 10 to 29 planes. The largest sales by States were Texas with 66, and California, with 54.

A wide variety of occupations was represented by purchasers of the training planes, although fixed base operators, such as dealers, flying school, and airport operators, were in the majority. Three Mississippi cotton planters went together and bought one plane. An automobile dealer bought five. Other purchasers included farmers, ranchers, cotton dusters, oil companies, business concerns of many types, doctors, flying clubs, housewives, mechanics, a hatchery operator, and persons engaged in a large number of other activities.

The majority of the sales were made to persons living within 200 miles of the centers, although several purchasers traveled as far as 500 miles to buy a plane.

The 3000 aircraft now being sold include Fairchild PT-19s, Boeings, Ryans, and a number of other models, which have been declared surplus by the armed services and turned over to the RFC for disposal.

preceding year. Review of 1943 profits by the Navy Price Adjustment Board resulted in a net refund of \$633,662 to the Government. For 1944, a provision of \$580,000 has been made for renegotiation.

Consolidated net sales increased to \$25,025,413 in the latest period from \$20,906,664 in the year ended Nov. 30, 1943.

Stowers Gets ACCA Post

Harvey E. Stowers has been appointed special assistant to the president of the Aeronautical Chamber of Commerce for Western United States by James L. Straight, manager of the Chamber's Western Regional Office in Los Angeles. In his new position, Stowers will assist the chamber in its air power, personal aircraft, and landing facility programs, and will fill speaking engagements in California and other western states. Before joining the chamber, Stowers was executive assistant to L. M. Bach, vice president of Lockheed Aircraft Corp., and prior to that was a sales executive for the Studebaker Corp., South Bend, Ind.

Sales Center	Sales (April 6 through April 14)	Sold	Received
Arizona:			
Phoenix	4	\$3,700	
Wickenburg	5	5,400	
Tucson	10	10,900	
Arkansas:			
Pine Bluff	11	12,355	
West Helena	5	6,300	
California:			
Ontario	16	17,260	
Hemet	18	18,440	
Blythe	3	2,825	
Concord	19	22,120	
Colorado:			
Dupont	13	10,220	
Florida:			
St. Petersburg	18	17,400	
Georgia:			
Augusta	7	6,325	
Americus	4	3,700	
Douglas	1	1,375	
Illinois:			
Lansing	18	21,970	
Iowa:			
Des Moines	7	8,800	
Kansas:			
Wichita	4	4,815	
Massachusetts:			
North Grafton	17	18,400	
Michigan:			
Lansing	19	22,400	
Minnesota:			
Minneapolis	20	24,175	
Mississippi:			
Madison	21	21,905	
Clarkdale	5	4,975	
Missouri:			
Cape Girardeau	8	7,400	
Sikeston	10	9,850	
Robertson	13	12,800	
Montana:			
Helena	4	3,900	
New Jersey:			
Readington	29	35,380	
Nebraska:			
Omaha	12	11,915	
New Mexico:			
Albuquerque	4	4,300	
New York:			
Albany	20	22,900	
North Carolina:			
Charlotte	7	7,900	
Ohio:			
Akron	19	22,900	
Oklahoma:			
Oklahoma City	12	13,700	
Ponca City	3	3,625	
Muskogee	8	7,000	
Oregon:			
Trottdale	5	4,775	
Pennsylvania:			
Pittsburgh	23	26,620	
South Carolina:			
Camden	4	3,500	
Bennettsville	1	875	
South Dakota:			
Huron	6	5,050	
Tennessee:			
Jackson	14	13,450	
Union City	4	4,300	
Texas:			
Fort Worth	5	6,100	
Lamesa	15	13,925	
Fort Stockton	13	13,175	
Cuero	11	11,000	
Vernon	3	3,025	
Stamford	0	0	
Corsicana	11	10,425	
Ballinger	1	875	
Houston	7	7,970	
Utah:			
Salt Lake City	10	9,750	
Virginia:			
Alexandria	36	37,325	
Total	366	\$617,840	



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Su primera ruta

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ABRIL 4

El día 4 de Abril de 1945 se inauguró la primera ruta de AeroVIAS Braniff entre la Ciudad de México y Nuevo Laredo, donde se harán conexiones inmediatas con Braniff Airways y otras líneas a los principales puntos de los Estados Unidos. Se utilizarán aviones DOUGLAS DC-3 de 21 pasajeros en todos los vuelos. Esta es la primera de una serie de rutas a las principales ciudades de México, América Central hasta Panamá y a La Habana, Cuba.



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EDIFICIO INTERNACIONAL • PASEO DE LA REFORMA No. 1 • MEXICO, D. F.

French 'National Enterprise'

Air Minister Charles Tillon declared at the closing session of the first French Aviation Congress in Paris that the French government has decided to transform the Gnome and Rhône airplane engine plant into a "national enterprise," because, he said, the present administration has not produced satisfactory results. He did not explain the form of nationalization to be undertaken. Tillon also proposed that the French airlines should operate as a state monopoly in order to compete with those of other nations.

AAF Develops Iron Lung

A portable iron lung which will permit a person requiring immediate respiratory aid to be transported to a hospital in an airplane with a minimum loss of time has been developed by the maintenance shops of Amarillo Army Air Field. The new breather, according to Col. Clarence A. Tinsman, post surgeon, is not designed to replace the all-purpose iron lung, but rather as life-saving device adapted to any short time respiratory need, and particularly valuable for air transportation.

Manufacturing Briefs

Packard Postwar Announcement

Packard Motor Car Co. will continue production of aircraft and marine engines after the war, it revealed recently in its annual report to stockholders. In fulfilling its war assignments of Rolls-Royce aircraft engines and PT-boat marine engines, the company produced 1944 dollar volume exceeding four times the total of any former peacetime year. The company does not see any great volume in the postwar specialized engine line compared with its automobile output, but believes the research in these fields will benefit all its future products.

Platt LePage Contract Cancelled

The Army has cancelled several contracts held by the Platt LePage Aircraft Co., Midvale, Pa., for helicopter development and production, according to press reports. The decision to discontinue further work on the Platt-LePage twin rotor types is said to be due to shifting military needs and the development of other types of helicopters. Company officials are trying to get new orders to keep their present working force busy.

Eastern Stops Work for Week

Eastern Aircraft Division of General Motors Corp. halted fabricating and assembly work for one week, beginning April 23, with full Navy and WMC approval, to complete details in connection with the start of production on a new plane and to take inventory. Union officials protested the shut down, saying the inventory should have been taken at night.

Rheem to Make Ryan Units

A \$7,000,000 contract with Rheem Manufacturing Co., Los Angeles, for wing panel units for the new Ryan Navy fighter has been approved by the Area Production Emergency Committee of the War Production Board. This is the largest contract yet reported under the new rule which requires urgency committee approval on all sub-contracts amounting to more than \$100,000 and requiring additional manpower.

Favors Compulsory Military Training

One year of compulsory military training for youths over 18, to be followed by two-week refresher courses during the ensuing five years is advocated by J. Carlton Ward, Jr., president of Fairchild Engine & Airplane Corp. Ward further holds that if a man has not finished his formal education by the time he is 18, his compulsory training should be deferred until he completes both college and graduate courses. He then would be indoctrinated into the compulsory period with his appropriate rank and rating to work in the military category nearest to the occupation for which he has been educated.

Northrop Employees Oppose Unions

Employees of Northrop Aircraft, Inc., voting in a National Labor Relations Board election, cast ballots against any union representation in a recent election, thus holding to a non-union status which has characterized the plant since its inception. More than 50% of those voting were against union representation, so that no runoff election will be necessary. The CIO United Auto Workers received 39.9% of the vote cast; the AFL International Association of Machinists 33%, as compared with 50.4% against any union representation. Interesting sidelight of the pre-election campaigning was organized opposition to union representation by a group of ex-servicemen, now engaged in war work at the plant.

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Industry Favors Changing Airworthiness Requirements For Lightplanes, Says ACCA

The aircraft industry has recommended sweeping revisions in government airworthiness design requirements for personal aircraft to permit the postwar flier wider choice of aircraft types.

The Aeronautical Chamber of Commerce, in a report to the Civil Aeronautics Board, said the recommendations represent a "basically new approach" to the problem of safety regulation of personal-type aircraft.

The industry would eliminate current minimum performance requirements (take-off distance, rate of climb, etc.), which now must be incorporated in all planes. The proposal would require instead that carefully determined data on essential flight characteristics be supplied to the pilot by the Government and the manufacturer. It is believed that the flier's concern for his own safety will insure proper observance of this greater safety responsibility.

The industry feels, the report stated, that the manufacturer and the government should be jointly responsible for determining the aircraft performance and flight characteristics and for supplying the personal flier with information on operating limits.

Jap Mandated Islands Should Become Naval, Air Bases, Says League

A recommendation that the Japanese mandated Pacific Islands be built up as air and naval bases to preserve the security of the United States after the war has been sent to Secretary of State Stettinius by Charles E. Wilson, president of the Air Power League. The telegram reads:

"As a civilian organization devoted to maintenance of national security and permanent peace through air power, the Air Power League believes that one of the most urgent questions before the American people is the disposition of Pacific Islands north of the equator formerly mandated to Japan. Projected discussion of the trusteeship principle at the San Francisco Conference requires that a national policy toward these islands be formulated at once. Japan's rule of these islands became an area of darkness in which plans for aggression against this hemisphere were offered. At present the islands do not involve territorial claims of other nations. Many of the islands have already been recovered by the Armed Forces of the U. S. and many military observers consider them essential to the security of the U. S. in the postwar period."

Therefore, the Air Power League urges that our government take immediate steps to acquire such of these islands as the War Department and Navy Department consider of strategic value and that the U. S. build thereat air and naval bases adequate to maintain peace in the future and to safeguard this country from possible future attack. The Air Power League does not believe that such procedure would violate any principles to which the nation has subscribed. Acquisition of these islands as air and naval bases by the U. S. is regarded by the League as of grave importance to future security of the nation.

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Belgium and Ethiopia Sign

Viscount Alain du Parc, chairman of the Belgian delegation to the International Civil Aviation Conference, recently signed the following documents concluded at the Conference: interim agreement, transit agreement, and the convention. Ethiopia recently signed the interim, transit and transport agreements.

Air Power League Lists Board of Directors

The Air Power League, originally known as the Air Force League, has announced the membership of its Board of Directors as follows: Lawrence D. Bell, president, Bell Aircraft Corp.; John E. Bierwirth, president, New York Trust Co.; Philip A. Carroll, Shearman and Sterling and Wright; Amon G. Carter, president, Carter Publications; Gardner Cowles, Jr., president, Des Moines Register and Tribune; Ralph S. Damon, vice president, American Air Lines; Donald D. Davis, executive vice president, Minnesota and Ontario Paper Co.; Donald W. Douglas, president, Douglas Aircraft Co.; Clark Gable, Metro-Goldwyn-Mayer Studios; George M. Hutchison, secretary, National Geographic Society; Charles S. Jones, Casey Jones School of Aeronautics; Charles F. Kettering, vice president and director of research, General Motors Corp.; Oliver L. Parks, president, Parks Air College; Edward V. Rickenbacker, president, Eastern Air Lines; Frank F. Russell, president, Cerro de Pasco Copper Corp.; Sumner Sewall, Arthur Sewall and Co.; Elliott White Springs, president,

Lancaster and Chester Railway; Charles E. Wilson, president, General Electric Co.; Theodore P. Wright, administrator, Civil Aeronautics Administration; and John Russell Young, commissioner, District of Columbia.

Charles E. Wilson is president of the League and Howard W. Angus is executive vice president. A complete list of charter members is available from the offices of the League in the Empire State Building, New York 1, New York.

Gen. Chidlaw Gets Award

Brig. Gen. Benjamin W. Chidlaw has been awarded the Legion of Merit for his work in the development of a jet-propelled airplane during 1941 and 1942 when he headed the Army Air Forces Experimental Engineering Branch. Gen. Chidlaw recently was nominated to the rank of Major General.

War Dept. Compiles Aircraft Data

The War Department has just issued a compilation on the currently releasable data on the bulk of the aircraft models now being used by the Army Air Forces. Included are descriptions, specifications and dimensions, and performance figures for normal operations.

Classified Advertising

SENIOR ANALYST and Statistician of 28 years experience with Army, Government, and commercial airlines desires position with progressive airline management. Applicant is familiar with all manual and mechanical methods of compilation; cost, revenue, and flight analyses. For details and references please address Box 433, AMERICAN AVIATION, American Building, Washington 4, D. C.

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